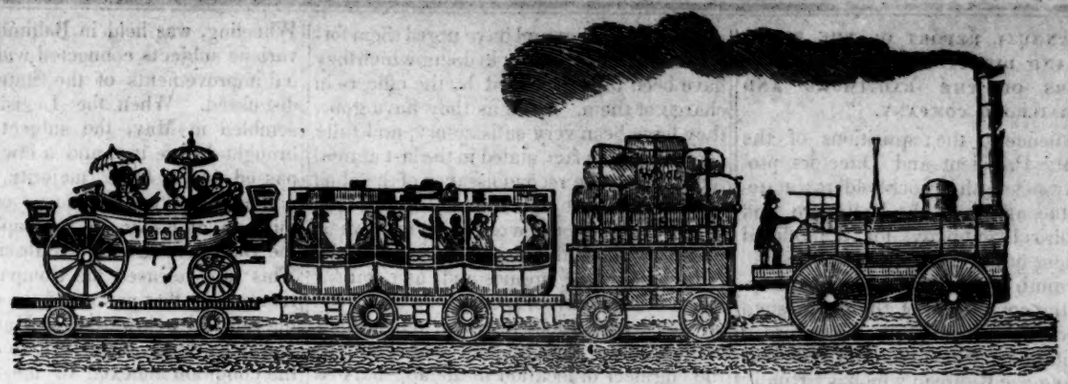

AMERICAN RAILROAD JOURNAL,
AND ADVOCATE OF INTERNAL IMPROVEMENTS.

PUBLISHED WEEKLY, AT NO. 122 NASSAU STREET, NEW-YORK, AT FIVE DOLLARS PER ANNUM, PAYABLE IN ADVANCE

D. K MINOR, and GEORGE C. SCHAEFFER, } EDITORS AND PROPRIETORS.] SATURDAY, OCTOBER 22, 1836. [VOLUME V.—No. 42.

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AMERICAN RAILROAD JOURNAL.

NEW-YORK, OCTOBER 22, 1836.

TO RAILROAD CONTRACTORS.

PROPOSALS will be received until the 8th day of December next, for the graduation and masonry of the first ten miles of the Gainsville and Narkeeta Railroad. A profile of the route, with plans and specifications of the work, will be exhibited at Gainsville, for ten days previous to the time of letting and all other information given, on application to the subscriber or to the Assistant Engineer. Recommendations will be expected in all cases, of persons not known to the officers of the company or to the Engineer.

For the information of persons at a distance, it may be remarked, that this road commences at the town of Gainsville, on the Tombeckby river, and extends twenty-two miles south-west to Narkeeta in the State of Mississippi. The Tombeckby is navigable for Steamboats the greater portion of the year and having a direct communication with Mobile and New-Orleans, will afford facilities for procuring the supplies necessary for the hands employed on the work, or for their ready conveyance hither, if procured from a distance. The country through which the road is located, being perfectly healthy, and the mildness of the climate admitting of operations throughout the winter season renders the contract peculiarly desirable to those wanting winter employment. To an enterprizing and energetic contractor the construction of this road offers the prospect of a profitable job.

D. H. BINGHAM, C. E.

Gainsville, Ala. Sept. 21, 1836. 42—tDec1

NOTICE TO CONTRACTORS.

WASHINGTON AND RALEIGH RAILROAD

PROPOSALS will be received at the office of his Company in Wilmington (N. C.) until the 15th of November for the graduation and bridging of 50 miles of the above Railroad, commencing at the north-east branch of the Cape Fear river, ten miles from Wilmington.

Any information which may be desired, can be obtained of Mr. T. H. Williamson, who will at all times be found on the line, or from the subscriber at Wilmington.

Contractors unknown to the undersigned must accompany these proposals with recommendations,

WALTER GWYNN

October 15, 1836. 42—3t

A FARM TO BE SOLD AT AUCTION,

AT the Orange Hotel, in the Village of Newburgh, on Tuesday, 25th October, at 2 o'clock P. M. A Farm three miles north of Newburgh, Orange county, now occupied by Robert Anderson, containing about

FIFTY-ONE AND A HALF ACRES,

including five or six acres of a handsome grove of wood land, house, barn, orchard, &c. This Farm is well watered and beautifully situated on high ground, on the banks of the Hudson river, and commands a most extensive view of the surrounding country, not surpassed by any on the river; overlooks Newburgh and the surrounding villages, from West Point to New-Hamburgh, a river view of about twelve to fourteen miles, and joins the road which leads from Newburgh to Marlborough, Milton, &c., and would be a most desirable site for a country seat. It is excellent grain land, with a good proportion of natural meadow, a loam soil over limestone, and has abundance of every material of wood and stone for building and fencing, sufficient to put the whole in complete order.

Reference for particulars may be had by calling on George Mather, No. 121, Prince st. New-York.

Terms liberal and made known at the sale

SAMUEL PARMENTER, Auctioneer.

Newburgh, Oct. 10, 1836. 42

Joseph W. Patterson, Esq., has been unanimously elected President of the Baltimore and Ohio Railroad Company. The Baltimore Gazette says this vote of the stockholders of that Company, will meet the general approbation of the citizens.

REAL ESTATE AT NEWBURGH.—We would ask the attention of our readers to the notice in our columns to day, of the sale of a small farm near *Newburgh*. It is, we are informed, a delightful situation on the banks of the Hudson river, and a very desirable residence for a gentleman who is fond of country life, and at the same time, an extensive water prospect. The sale is to take place on the 25th inst in the village of Newburgh.

REAL ESTATE AT POUGHKEEPSIE.—On Tuesday next, 25th, will be sold at Poughkeepsie 200 of the most pleasantly situated lots in that flourishing village. They are situated in the vicinity of the Dutchess Whaling Company's Dock, and the extensive Locomotive Engine Manufactory, and command a beautiful view of the River.—These lots are elligibly situated for residences and must become highly valuable in consequence of the extensive Manufactories now building and soon to be commenced in front of them. We ask the attention of our readers in New-York to the sale.

SOMERVILLE ROAD.—The Somerset whig informs us, that laborers have commenced operations on the road on the east side of Somerville; and that in two or three weeks 2 or 300 hands will be employed on the whole line.

WILLIAMSPORT AND ELMIRA RAILROAD.—The final survey and location of this important public work were completed a few days ago, except the point of termination in this village, four different points being surveyed and under consideration, viz: below the bridge, at the bridge, near the canal, and near the house of T. North. Esq. We are told by the company that 25 miles, from Williamsport to the coal beds, and 14 miles, from Elmira south, will probably be put under contract this fall. The survey has resulted in an extremely favorable impression as to the expense and the few difficulties to be overcome.—[Elmira Republican.]

TENTH ANNUAL REPORT OF THE PRESIDENT AND DIRECTORS TO THE STOCKHOLDERS OF THE BALTIMORE AND OHIO RAILROAD COMPANY.

In obedience to the requisitions of the charter, the President and Directors propose to lay before the Stockholders a statement of the affairs of the Baltimore and Ohio Railroad Company, for the official year, ending on the 1st of October, 1836.

In the ninth annual report, the board announced the completion of the main stem to Harper's Ferry, and of the branch road to Washington. Since then the Winchester and Potomac Railroad, which is virtually a prolongation of the Baltimore and Ohio Railroad up the valley of the Shennadoah, has been opened for general use. At present, some delay and difficulty take place in transporting goods and passengers from one road to the other. This, however, will be obviated, when the viaduct across the Potomac is finished. The stone piers of this structure have been completed for some time, and the wood work will be ready for the passage of cars during the present year. The passenger and burden trains of the two companies will then stop, side by side, in the same depot, and the transit from one to the other will be effected promptly and with great convenience.

Surveys are now in progress for the extension of a Railroad from Winchester to Staunton, and there is reason to believe that this work will be undertaken. It is of great importance to Baltimore, and when completed will furnish a continuous railroad of two hundred and fifteen miles in length, from this city into the heart of Virginia.

In the last annual report, the results of the reconnoissance of the chief engineer of the route for a railroad from Cumberland westward, were laid before the Stockholders; and the general satisfaction that they afford, and the sentiment universally expressed, that the time had arrived for the adoption of vigorous measures in the prosecution of the road to the points of its original destination, caused the board, early in the spring, to organize an engineer force, for the purpose of making detailed surveys and examinations between Harper's Ferry and the summit of the Allegany, with a view of continuing them, afterwards, to Pittsburg and Wheeling. Four brigades, under the charge of competent officers, were accordingly employed, and have since, without interruption, been diligently at work. A continuous line has been surveyed from Harper's Ferry to the top of the dividing ridge between the eastern and western waters; and the engineers are now eugaged in making the surveys on either side of the first line, necessary to determine the best route for the location of the road. The rough and mountainous country, over which the surveys have to be carried, and the importance of leaving no practicable route, of the many that present themselves, unexamined, render the labors of the engineers, necessarily, very tedious; and it will be some time yet before the exact route to be adopted, can be ascertained. The board have considered these surveys as one of the most important subjects claiming their attention, and have urged them forward with all diligence; in doing which they have been fully seconded by the officers in charge of them. So far as they have gone, they have been very satisfactory, and fully corroborate the fact, stated in the last annual report, upon the reconnoissance of the chief engineer, "that the mountains between Cumberland and the western waters can be passed, without the use of stationary power by locomotive engines and their trains." For a full account of surveys, up to the end of the current official year, reference is made to the reports of chief engineer, and the engineer of location in the appendix A.

In the month of August last, the brigade employed on the Potomac above Harper's Ferry was broken up by the severe illness of nearly every one of its members, owing to the unhealthiness of the region in which they were at work. Protracted indisposition ensued; and it is only recently that the brigade has been recognized. The country upon the Potomac will not be sufficiently healthy for the brigade to resume its labors there, before the 1st of November. In the mean time, it has been directed to institute—survey's at Parr's spring ridge—with a view to the re-location of the road there, so as to dispense with the inclined planes, that have so long been a source of heavy expense and injurious delay. When originally located, the then state of knowledge, on the subjects of railroads, and their machinery, and the character of the country for a long distance on either side of the point of crossing the ridge, left no alternative but to adopt them. Since then, however, the astonishing developement, that has taken place of the capacities of locomotive engines, makes it certain that the ridge where the planes occur can be surmounted by a uniform grade, adapted to the economical and efficient use of locomotive power. When this is accomplished, the interests of the stockholders and the public will be mutually and most materially advanced.

At the December session of the Legislature of Maryland, eighteen hundred and thirty-five, the board of directors memorialized that body, praying for aid to complete the road to Pittsburg and Wheeling; and at the same time, a similar application was made to the Mayor and City Council of Baltimore. The latter, at once, and with great liberality, and responding to the universal sentiment pervading this community, resolved to subscribe three millions of dollars to the capital stock of the Company, whenever the existing legal difficulties were removed, which prevented, at that time, the extension of the work in an unbroken line, eastward, from Harper's Ferry. The bill, before the Legislature, however, for subscribing to the stock of this Company, and also in aid of other works of internal improvement in which the State was interested, met with determined and strong opposition; and, at the end of a protracted session, the subject was postponed to an adjourned meeting of the Legislature in May ensuing. In the interval a numerous and highly respectable convention, the interest of which attracted delegates from Pittsburg and Wheeling, was held in Baltimore, and the various subjects connected with the internal improvements of the State were fully discussed. When the Legislature re-assembled in May, the subject was again brought before it; and a law was finally passed by a large majority, containing, among other subscriptions, one of three millions of dollars of the capital stock of the Baltimore and Ohio Railroad Company. This law released the Company from the restrictions, that prevented the extension of the railroad westward from Harper's Ferry, and in so doing, enabled it to comply with the condition annexed to the subscription by the Mayor and City Council. Before the law could take effect, however, it was necessary that it should receive the assent of both the Baltimore and Ohio Railroad and the Chesapeake and Ohio Canal Companies. The assent of the first was, as the stockholders are already aware, given at the general meeting held on the 18th July last. The assent of the latter was delayed, in consequence of apprehensions entertained by some of its stockholders, that the provisions of the law, in regard to the joint construction of the railroad and canal, along the Potomac, would, if carried into operation, materially impair the permanency and usefulness of the canal. To obviate this difficulty, the stockholders of the Railroad Company, at their meeting of the 26th July last, authorized the board of directors to enter into stipulations with the canal company, touching the matters in question; and the apprehensions of the canal company being thereby removed, its assent was given to the law, which, in consequence, went into immediate operation. A copy of the stipulation with the canal company, entered into by the board, in conformity with the directions of the stockholders, will be found in the appendix.

The subscription to the stock of this Company, authorized by the law of the extra session, was made to depend upon a guarantee being given to pay six *per cent. per annum*, to the State on the amount subscribed by it, at the end of three years from the payment of each of the State's Instalments; with the provision, that should the profits of the road exceed six per cent. the State was to receive no greater dividend in consequence, but the excess was to be divided among the other stockholders. In consideration of the interest, so to be secure to the State, the Company was authorized to charge one cent per mile, in addition to its present charge, for each person transported upon the road. At their general meeting on the 18th of July, the stockholders directed the preparation of the guarantee in question, which was accordingly prepared and transmitted, as required by the law, to the treasurer of the western shore. A copy of it will be found in the appendix. The right of the Company to make the additional charge is now perfected. Had it been made during the last official year, the nett revenue of the main stem would have been doubtless much greater than it has been.

Another important provision, contained in the law of the extra session, is that

which releases the company from the obligation to erect "a close fence of boards" between the railroad and canal, at the narrow passes from the point of rocks to Harper's Ferry, as a condition precedent to the use of steam between the two places; provided the Railroad Company shall first tender to the canal company the price of a post and rail fence, for the corresponding portions of the river edge of the towing path. The objections to building the board fence were such, that they prevented (and but for the law of the extra session would have continued to prevent) the use of steam above the Point of Rocks, and obliged the Railroad Company to maintain an expensive horse power to do the transportation from thence to the Ferry, a distance of twelve miles, which the engines, that crossed the valley of the Monocacy, could have done with but little additional cost. As soon as the commissioners appointed under the act shall have ascertained the cost of the post and rail fence, it will be tendered to the canal company, and the locomotives, that are now obliged to stop at the Point of rocks, will supersede the horse power beyond that place, and continue their route to Harper's Ferry.

With regard to the other provisions of the law of the extra session, it is not the intention of the board to enter into detail. The act itself was before the stockholders for their acceptance, and they must be sufficiently familiar with its provisions. Those parts of it only, requiirng the present action of the stockholders or the board have been particularly referred to. The board are gratified in being able to announce to the stockholders, that the various conditions precedent to subscription, which it contains, having been complied with, the subscription of the treasurer of the western shore for thirty thousand shares of the capital stock of the company, (3,000,000) was made on the 23d of September last; and also, that on the 27th of the same month, the same amount of stock was subscribed, under the ordinance to that effect, by the Mayor of Baltimore.

Six millions of dollars have thus been added to the effective means of the company for the prosecution of the railroad to the western waters. What the amount that will be necessary, to finish the work to Pittsburg and Wheeling, may be, it is impossible, at this time, to say, with any approximation to accuracy. Every effort is being made to complete the surveys to ascertain it. Some time must elapse before it is known. Cost what the road may, however, it will be a cheap road to Baltimore; as, restoring to her the trade of which the great works of rival cities have deprived her, it will place her in possession once more, and forever, of all the advantages to be derived from her geographical proximity to the west.

The time limited in the charter for the completion of the main stem within the State of Maryland, extending only to the 4th July, 1838, an act, prolonging the period for five years from that date, was applied for and obtained at the last session of the Legislature.

In the year 1835, the Legislature of Pennsylvania incorporated a company to construct a canal from the great Pennsylvania Canal, at Columbia, to the Maryland line, along the eastern shore of the Susquehanna. At the following session, this company applied for permission to change the location of the proposed canal, with a view of constructing it on the western side of the river, and prolonging it, under authority from Maryland, to a *terminus* in the neighborhood of Havre de Grace. The Legislature of Pennsylvania gave the desired permission; but upon condition, that the Baltimore and Ohio Railroad Company should first assent to the junction, with the main stem of their work, of a railroad from Pennsylvania, entering Maryland on the dividing line between the former State and Washington county, and striking the Baltimore and Ohio Railroad at or near Hagerstownr o Williamsport. To have assented to this, unconditionally, would have put it in the power of the connecting Railroad Companies of Pennsylvania, by lowering their rates of toll, to abstract the travel and transportation from the Baltimore and Ohio Railroad, east of the point of junction, diverting it along their respective roads to the rival city of Philadelphia—and so enabling the latter, notwithstanding its greater distance from the western waters. to receive or forward goods as cheaply as could be done at or from Baltimore; thus making a work, constructed with the means of Maryland, ensure to the benefit of the commercial emporium of a rival State, that had contributed nothing to the undertaking. Pledged as the Baltimore and Ohio Railroad Company now is, to pay to the State six per cent. on its late subscription, it would have been impossible, with any regard to the interests of the stockholders, to reduce the toll, in competition with works, many of which were the property of the State of Pennsylvania, and the policy of all of which would have been to attract the business from the Baltimore and Ohio Railroad, east of the point of junction, to themselves. With a view of obviating this difficulty, a condition was inserted in the act, that in case of a reduction of the tolls on the Pennsylvania works in connection, mediately or immediately, with the Baltimore and Ohio Railroad, the tolls on that road, west of the point of junction, might be increased in proportion; so as to keep the charges on persons, goods or produce, going to or coming from Pennsylvania, uniform throughout the distance they were to be transported; thus putting it in the power of the Baltimore and Ohio Railroad Company to countervail, at all times, the effects of a reduction of tolls on the Pennsylvania roads in connection with their own work. The law of Pennsylvania, with this provision, has been assented to by the board of directors, and has gone into operation. To have refused the assent, would have been illiberal towards Pennsylvania, which had already permitted a connection by Maryland with her works, in the cases of the railroad to York and the canal along the Susquehanna, as well as inconsistant with the spirit of the age, which is to multiply all means of intercommunication, and increase the number of markets accessible to the producer; and it would, besides, have deprived the citizens of Baltimore, deeply interested in the Susquehanna improvement, of what was deemed of great value to them and to the community. The road from Pennsylvania, whose junction with the main stem, is to comply with the provisions of the above law, has not yet been designated.

In several of their preceding reports, the board of directors have adverted to the efforts made by them to perfect a locomotive engine, adapted to the curved character of their road, and cable of using anthracite coal as fuel; and the very satisfactory results obtained have been, from time to time, detailed. The further experience of the board fully justifies the steps heretofore taken by them in this particular. There are now eleven first rate locomotive engines in use npon the main stem and Washington branch, all of which have been manufactured at the company's shops; and six more are being built, which, it is expected, will, when the road over Parr's ridge is re-located, and re-constructed without inclined planes, enable the company to dispense entirely with the use of horse power, except in the city of Baltimore. A very considerable diminution in the cost of working the road will thus be effected.

Since the death of Phineas Davis, mentioned in the last annual report, Messrs. Gillingham and Winans have taken the company's shops, at the Mount Clare depot, and continue there the manufacture of locomotive engines and railroad machinery, commenced by Mr. Davis. Within the last year, the force employed by them has been considerably increased; a circumstance much to the interest of the company, as it furnishes the means of a prompt compliance with the wants of the road, and, when this is extended westward, will insure a supply of locomotive power and the various necessary machinery, as fast as it is wanted. It may be observed here, that the work-shops at the Mount Clare depot are carried on by Messrs. Gillingham and Winans, independent of the company. They are bound to contract to supply the company with locomotive engines, and all other railroad machinery, at a stipulated price, and, at all times, to give precedence to the company's demands for work. They have the use of the ground and buildings occupied by them, with the fixed machinery left by Mr. Davis, without rent, being bound to keep the same in repair, and return them as they received them. In consideration of this, they manufacture the company's engines, so much below the market price for them elsewhere, that the interest on the cost of buildings and fixed machinery, above mentioned, is fully paid; and, indeed, it would take but a little while, when the extension of the road westward required a larger number of engines, to reimburse to the company the entire outlay for the shops at the Mount Clare depot.

Recent experiments, made with the two last engines built by Messrs. Gillingham and Winans, show a power of traction ex-

erted by them, when the weight of the engine was but eight tons—much exceeding the greatest power that has yet been exerted on the Liverpool and Manchester Railroad by a twelve ton engine. When the necessity of having powerful engines to overcome the heavy grades and sharp curves, that must be encountered in the mountain region, is considered, the results here mentioned cannot be too highly appreciated.—They make that easy, which, but a few years since, would have been deemed impossible; and the practicability of passing the Alleghanies with locomotive engines and their trains is owing, not more to the topographical advantages of the particular route, than to the powerful machines that have been invented and perfected in the work shops of the company. For particulars of the experiments with the locomotive engines, reference is made to the report of the chief engineer on the subject.—Appendix B.

The gross receipts from the main stem during the year ending on the 1st inst., have been $281,966 87, exceeding the gross receipts the preceding year by $18,-598 77. The expenses of transportation during the same period have been $128,-177 41, exceeding those of the preceding year by $14,210 23. The repairs of the road for the year just ended have been $53,101 32, while the repairs of the year ending Oct. 1st, 1835, amounted to but $25,103 63, making a difference of $27,-997 69. The repairs of machinery and cars have also exceeded the repairs of the preceding year by $9,380.

It will be at once observed, that the expenses of transportation have increased in a much greater proportion than the gross revenue. This is to be accounted for by the extraordianry inclemency of the winter of 1835–36. The frequent falls of snow, lying for a long time upon the ground, alternating with rain, and cold freezing weather, so coated the rails, as to prevent, very frequently, the use of steam for transportation, and made it necessary to employ a number of horses to prevent the business of the road from being interrupted. The snow was often so deep, and the ice on the rails so thick, as to defy the ordinary modes of removing them, and the employment of gangs of laborers became necessary for the purpose.

It is gratifying to the board to be able to state that, while many of the railroads to the north of the Potomac were either obliged to suspend operations altogether, or were interrupted for days together, by the inclemency of the season, not a single trip was lost either on the main stem of the Baltimore and Ohio Railroad, or on the lateral road to Washington.

It will also be observed, that the repairs of the road, which, in the year ending October 1st, 1835, amounted to but $25,103 63, have this year been increased to $53,-101 32, which is to be attributed to the decay of the wooden string piece, upon which the iron rail has been laid on a considerable part of the line of the road. This it was expected, when it was adopted, would last from eight to ten years; on the contrary, during the last year after it had been in use but six years, and some of it not so long, the wooden string piece very generally required replacing. The graduation and masonry of the road continue in good order along the entire line; the repairs, which from so large an item among the charges against the income, occur in the superstructure,—thus corroborating the opinion, which is now generally entertained, that where the means can be obtained with which to procure it, a heavy iron rail is the best and most economical in the end.

The repairs of machinery, engines and cars, have, also, as is seen above, considerably exceed those of the year ending October 1st, 1835. This is owing chiefly to the increased number of locomotive engines now in use upon the road.

On the Washington road, the gross receipts, since it was opened, including a part of the year ending October 1st, 1835, have been $178,333 95, of which the State tax, amounting to $40,564 26, is a part. The expenses of transportation upon this road have been but $26,540 47, or nearly fifteen per cent. of the gross receipts, while, the expenses of transportation upon the main stem are forty-five and a half per cent. of the gross receipts. The difference is to be chiefly attributed to the more ample charge allowed for the transportation of passengers on the branch road, and to the fact of steam being employed exclusively as the moving power throughout. When the planes at Parr's ridge are done away with, and horse power on the main stem superseded entirely by steam, the result with the increased toll authorized by the act of May session, will be in proportion favorable on this road also. The expenses of repairs of the Washington road have been $15,-423 17, of which the sum of $10,000 is properly chargeable to construction—having been spent in the removal of slides and the adjustment of embankments, and forming a part of the construction as justly as the original excavation and graduation of the road bed.

The nett earnings of this road, since it was opened, and which constitute a fund for dividends, amount to $88,772 03. Besides the dividend that the main stem is entitled to receive as a stockholder in the Washington branch, it must be borne in mind, that a considerable sum is annually received by the former for the use of that part of the road which is common to both works. The board have little doubt, therefore, that the receipts from the Washington branch will be more than sufficient to meet the interest on the money borrowed by the main stem to construct it; and indeed the increase of travel and transportation between Baltimore and Washington has been such, since this means of intercommunication has been opened, that there is every reason to believe, that the nett profits of the branch, exceeding six per cent. per annum, will become a source of income to the main stem, fully justifying the company in undertaking to construct it.

In the last annual report, the board expressed the belief that they would, thereafter, be enabled to make regular semi-annual dividends among the Stockholders. In making this assertion the board believed that they would be borne out by the increasing business of the road. Not only did they anticipate the increase, which past experience had led them to expect, but they were under the impression, that, upon the opening of a continuous railroad communication with Winchester, the additional trade and travel would so add to the income of the company, as to ensure the payment of regular dividends to the stockholders.—They were under the impression too, that the receipts from the Washington Branch would be sufficient to meet the interests due on the money borrowed by the company to pay for its stock in that work. In these anticipations the board of directors found themselves, when the time for declaring the expected dividend arrived, disappointed. And they have found it necessary, to call for an instalment of five dollars per share on the stock.

On the first of October, 1835, at the date of the last annual report, the receipts of the company for the preceding six months had amounted to $148,541 63. Instead of this amount being received for the ensuing six months, ending on the first of April, 1836, when the dividend should have been made, the receipts were but $124,614 23, making a difference of $23,927 40.—Again, the board had no reason to believe, that the general expenses of the company for the six months ending on the 1st of April, 1836, would exceed the expenses of the six months immediately preceding.—The expenses of the latter exceeded, however, the expenses of the former period, by $26,320 70, making, in these two items alone, a deficiency, not anticipated on the 1st of October, 1835, of $50,248 10.—The causes of this diminution of receipts and increases of expenses have been already stated in a previous part of this report.

The board had expected too, that the $30,000, interest due on the money borrowed to make the Washington branch, on the 1st of April, 1836, would have been met by the dividends received from that work. Instead of this, however, it became a charge upon the main stem, making, with the items already enumerated, the sum of $80,240 10, by which the disposable revenue of the company was reduced below what had been anticipated, when the belief that regular dividends could be declared, was expressed in the report of October, 1835. These matters are stated at length, to explain why it was, that, with the confident belief entertained by them at the date of their annual report, the board of directors still found themselves unable to continue the payment of semi-annual dividends.

During the current year, the construction of the Potomac viaduct—additional sidelings and turnouts—right of way and damages—surveys—real estate and construction of depots and water stations—locomotive steam power and machinery have caused expenditures properly chargeable to the capital stock, but which have had to be met, in anticipation of instalments, by the revenue as it accrued. The amount of the

capital in the main stem is $3,311,250, while the money actually expended is $3,474,600 08. On the Washington branch, the capital paid in $1,500,000, and the capital expended is $1,588,899 61, making on the main stem, an over expenditure of capital $163,350 08, and on the Washington branch an over expenditure of $88,899 61; in all an over expenditure of capital of $252,249 69. To meet this, the company has borrowed money, and has appropriated the nett revenue of the main stem and also the nett revenue from the Washington branch.

To discharge the debt for borrowed money due, as aforesaid, the instalment above mentioned has been called for.—The amount that has been appropriated out of the revenue of the main stem and applied to purposes connected with the construction thereof, and not to general expenses, other than construction, it is proposed, shall be divided by the number of shares of stock, in the main stem, and each share credited with its proportion, as so much paid on it. In the Washington branch, where the stock has been paid in full, this means of giving to the stockholders the benefit of the revenue, which has been appropriated to construction, cannot be adopted. A new stock to the desired amount, may therefore be created, sold, and the proceeds divided among the stockholders. For an amount of the receipts, expenditures and condition of the company, on the 1st instant, reference is madee to the accompanying statement C.

Of the ultimate profit of the Baltimore and Ohio Railroad to the stockholders, the board of directors can only here reiterate the favorable opinion, that they have so often heretofore expressed. To doubt its making a return on the outlay, when it shall be completed to the western waters, is impossible, when the probable travel and transportation upon it then, are considered. There is hardly a railroad in the country, that has been completed, that is not now realizing a handsome return on the cost of its construction; and the chief reason why this is not done by the Baltimore and Ohio railroad, is, that it is not completed. If it were, at this day proposed to make a railroad to Fredericks own or Harpers' Ferry—(supposing the Baltimore and Ohio railroad to the west not to be projected even,) no one would be willing to undertake such a work through so difficult a region;—for every one would, at once, doubt its affording an interest on its cost. To expect, therefore, that the Baltimore and Ohio railroad, which now is not a road to the west, but a road to Frederickstown and Harpers' Ferry only should make the dividends declared by the finished railroads of the country, were vain indeed. The full extent of its profit can only be realized on its completion.

It is to be remarked here also, that when the charter of the Baltimore and Ohio railroad was granted, in 1826, by the Legislature of Maryland, it was the first railroad for general purposes that had been projected in the country—and so sanguine of profit were its friends, that the charge for passengers was deemed ample at three cents per mile, and for merchandize and produce, four cents eastward and six cents westward, making an average as experience shows, of about four and an half cents. Experience has since shewn, that upon a costly road, through a difficult country, these rates are too low, upon the limited amount of business that has heretofore been done by this company: and there are but few railroads in the union on which the charges are not higher.* Combined with the low rate of charge, to which this company is limited, may be mentioned those causes of expense—the working of inclined planes, and the maintenance of an expensive horse power to be used in the city—from which other railroad companies, whose stocks give large dividends, are exempt.

These matters are mentioned here, by way of showing the difference between the companies that are often cited as examples of productive institutions, and the Baltimore and Ohio Railroad Company—and to show that the cases are by no means parallel. The Portsmouth and Roanoke railroad, for instance, is allowed to charge six cents per mile for the transportation of passengers, and eight cents per ton for freight. The Washington branch makes the same charge for passengers—but only four cents for freight—and has to pay a bonus of one fifth of its receipts from passengers to the State. Were this bonus not paid, and the Portsmouth and Roanoke rates charged, it would be able to declare out of the earnings of last year alone, a dividend of eight and three-fourths per cent. to its stockholders—and at the same rates, for the same time, the main stem could have declared a dividend of eight and a half per cent. When this road is finished to the west, there can be no doubt of its productiveness—and even in the meantime. what, with the increase of toll already authorized, the avoidance of the planes at Parr's Ridge, it is believed that a return may be made to the stockholders.

It is the desire of the board to see the great work finished, that is to unite Baltimore indissolubly with the west. They believe that the prosperity of Baltimore depends upon it. The liberality of Maryland—the munificence of the city most interested, have contributed nobly to the enterprize; and the board cannot doubt, that when the surveys shall have ascertained, beyond cavil, the expense of construction, any deficit which may exist, will forthwith be furnished.

By order of the Board,
J. W. PATTERSON, *President.*

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*On the Petersburg railroad, for persons per mile, 5 cts. for goods per t. per mile, 10 cts.

Winchester and Potomac,	6 cts.	7 cts.
Portsmouth and Roanoke,	6 cts.	8 cts.
Boston and Providence,	5 cts.	10 cts.
Boston and Lowell,	5½ cts.	7 cts.
Mohawk and Hudson,	5 cts.	8 cts.

We insert the following report entire as we consider the Albany and West Stockbridge road a most important link in our chain of improvements.

It is highly gratifying to us, and redounds greatly to the credit of the Engineer, that so very favorable a line should be obtained in a country hitherto considered as irreproachable.

The books for subscription are opened this week if we remember correctly.

REPORT OF THE SUPERINTENDENT OF THE ALBANY AND WEST-STOCKBRIDGE RAILROAD.

REPORT.

To the President and Directors of the Albany and West-Stockbridge Railroad Company.

I submit to you the following report, showing what has been done upon your road since my appointment as superintendent, together with some remarks in relation to the road.

There has been expended upon the road for contingencies, besides amount paid to Engineer,	$177 22
For a lot of standing chesnut timber,	200 00
To Mr. Talcott, Engineer, for his own services and those of his assistants and laborers, and for instruments and other expenses attending the survey,	4,194 52
	$4,571 74

Nothing is charged in the above for services of superintendent, and part of the expenses of the last month are not included.

The surveys were commenced on the first day of September last, and continued until the deep snows prevented their further prosecution, and more than one hundred miles of line run, The results of which were reported to your board by W. H. Talcott, Esq. the Engineer, on the first of March last, which results were, generally, that a road could be made from the river at Greenbush, to the Kinderhook creek near Malden bridge, upon a grade, not exceeding in a place, forty feet the mile, or one foot in 132. From that creek, to a summit near Dr. Culver's, a distance of about seven miles, it became necessary to ascend at the rate of from forty-two to fifty-four feet per mile. From the summit to the State line at West-Stockbridge, the ascent did not exceed forty feet in the mile; making the whole distance upon this route, which I shall call the Culver route, $36\frac{28}{100}$ miles. The estimated cost of which, excluding the branch to Castleton, (which is now unnecessary by an act of the legislature) with single track and suitable turn-outs, laid upon chesnut sub-sills, red ceder cross ties and iron rails, together with depots, machine shops, engines, cars and other appurtenances, was put at $664,280 73

From a very careful examination made by Mr. Talcott, into the business to be done upon the road, and which was reported in detail, he showed the annual receipts, from passengers and freight, to be

$179,304. In this estimate he put the freight at half the present cost of transportation. From the above receipts, he deducted the annual expense of operating the road and of repairs $63,515 69, leaving a balance of $115,788 31, which is an interest of 18 per cent upon cost.

This company was organized under the act entitled "An act to incorporate the Castleton and West-Stockbridge Railroad Company," which authorized the construction of a road from Castleton, eight miles below Albany, to West-Stockbridge, and it was contemplated to bring the road to Albany by a private association.

It was found on examination that a line could be run, leaving the river directly at Greenbush, as well or better than at any point below, and about three miles distance saved.

The capital stock of the Company was $300,000, which was found not to be sufficient to build the road.

Application was made to the legislature, at the last session, and the charter so amended, that the title is changed to that of "The Albany and West-Stockbridge Railroad Company." The capital stock increased $350,000. The time for commencing the road extended to two years from the passage of the act, and the time for completing it to five years, and the company authorized to construct a railroad from the river at Greenbush to West-Stockbridge, by any route they may see fit, and the charter is otherwise liberal in its details.

It having been represented that a route could be found from Albany, and also from Troy, by or near Sand Lake, to Lebanon Springs, and thence to West Stockbridge, I directed the Engineer under my charge to run a line over that country to a point in the Lebanon valley near Brainard's Bridge; and also one from the line run last fall near Malden bridge up the valley of the Kinderhook creek, to the same point, about two miles east of Brainard's Bridge and then a line which would be common to both routes from that point, by way of Lebanon Springs and Whiting's pond, to West-Stockbridge. The result is, that the point in the valley near Brainard's Bridge, is 605 feet above tide water at Greenbush, and can be approached by following the line run last fall to Malden bridge, and thence to Brainard's Bridge, in 23½ miles, ascending in no place over forty feet in the mile. The same point can be approached by the line run near Sand Lake, in twenty-five miles, but over a summit about 200 feet higher than the point itself, and making the ascents and descents by this route 400 feet more than that by Malden bridge. A grade of more than 50 feet in the mile must be submitted to on this line, and the expense of grading, per mile, will be considerable more than on the other route.

The line from near Brainard's Bridge, run on the north side of the Lebanon valley, and passing within ten rods of the Spring itself, and thence to West-Stockbridge, need not exceed in ascent in any place over forty feet in the mile, and can be made within that grade the whole distance from Greenbush, by the way of Malden bridge and the Springs, to West-Stockbridge, in 41¾ miles, descending on the whole line going eastward, only thirty-eight feet, until the summit is reached at Whiting's pond, near the State line, and no curves less than 1,000 feet radius.

A line has also been run, commencing on the line run last fall at a point fourteen miles from Greenbush, and thence to intersect the Hudson and Berkshire railroad at Groat's. This shows that a road can be made from Greenbush to Groat's, in twenty-three and a fraction miles, and at ascents in no place over forty feet in the mile, and making the whole distance from Greenbush to Stockbridge, by Groat's 37 $\frac{87}{100}$ miles. This line descends in going eastward to the Kinderhook creek, 117 feet, being seventy-nine feet more than on the line by Malden bridge and the Springs. The ascents from Groat's to West-Stockbridge, upon the Hudson and Berkshire road, and which must be submitted to by this company, if that route is adopted, are much steeper than on either of the other routes, being for three miles together, about seventy-two feet in the mile, and five-eighths of a mile at eighty feet. These are the objectionable points in this route.

It may not be improper here to remark, that there are 5 miles together upon the Boston and Providence road, 37½ feet per mile. This is within two and a half feet of the steepest ascents necessary upon the route by the Lebanon Springs. This ascent upon the Boston and Providence road is found to be no objection to the successful use of steam locomotive power, and at almost any speed desired.

The expense of operating a road, however, depends very much upon its grades. The result of experience shows that the same engine that will draw a load of forty tons, exclusive of engine and tender, upon a plane of forty feet in the mile, will draw but 22 $\frac{50}{100}$ tons on a plane of seventy-two feet, and so in proportion between these points, and unless an extra locomotive is used to pass the steep grades, the engine must be loaded for the whole distance with no more than can be drawn up the steepest ascents.

These are important considerations in deciding between the route by Groat's, where the grades will be heavy, and that by the springs, where they are much lighter; and more especially so, in reference to a road coming to the mouth of the canal, which will carry, of flour and other productions of the west, into the interior of New-England, an amount of tonnage nearly equal to that coming from Stockbridge to the river.

In connexion with this point, I call the attention of the directors to the report of Mr. Talcott, herewith submitted, in relation to the business to be secured to the road, if the route by the Springs should be adopted. At page 3 of his report, he remarks that "The northern route by the Springs, would add to the general business of the road nearly all the pleasure travel to and from the Springs, which during the visiting season of 1835, amounted to 14,000 passages, and would no doubt be twice that number, or 28,000, immediately on opening a railroad from Albany to the Springs. This travel comes at a season of the year when but little freight is offered, and consequently can be done without much additional expense to the company. In fact the more advantageous grade upon this route will of itself compensate for doing the increased business, so that no extra allowance need be made for doing it."

In the report of Mr. Talcott, submitted on the first of March last, only $4,668 were allowed for travel to and from these Springs, expecting that as the route then reported upon would leave the valley of the Kinderhook eleven miles from the Springs, the ordinary stage coaches would retain most of that business. Hence it will appear that about $23,000 annual receipts will be added to the road by the adoption of this route.

This road is to form part of the great line of railroad from Boston to Buffalo, for the construction of which charters have been granted by Massachusetts and this State, and the works are going forward already upon almost the entire distance. And since making the report on the first of March, the "Act to incorporate the New-York and Albany Railroad Company," has been so amended that the road will probably be made, coming up through the east part of Dutchess county, and thence through the valley of Housatonic river to West-Stockbridge. Should that be done, it will bring the entire winter travel, and much of the summer travel between the cities of New-York and Albany, over your road.

There is no canal to compete with this road, either for freight or passengers. It will have no competition for the public travel from five of the New-England States, westward and back, nor for the freight destined for Albany and the West, nor for the flour and other productions of the west, going eastward, as that freight can be delivered directly from the canal boats to the cars on the road, without river charges, which cannot be done at any point below Albany. The Hudson and Berkshire road will compete with this for the eastern freight destined for New York and back; but when it was recollected that freights are and have for a long time been as low upon the river from Albany to New-York, as any point above Poughkeepsie, with daily lines of towboats; and this company having freight from the canal to load their cars going east, so that they can use their power both ways, it is believed that freight can be carried on this road by way of Albany to New-York, as cheap or cheaper, and as quick as by any road below. It may therefore be fairly calculated that this business will be divided between this and the Hudson road.

The expense and distance upon each route reported upon by Mr. Talcott, are as follows:

By way of Malden bridge and Lebanon Springs, distance 41¾ miles, cost, $647,529

By way of Groat's, adding half

the expense of double track from Groat's to Stockbridge, to be used by this and the Hudson company, distance 37½ miles, 560,376

By way of Malden bridge and Culver's summit, distance 36½ miles, 586,280

These amounts are exclusive of depots, machine shops, engines, cars, &c., and are all made for a superstructure of chesnut sub-sills, red cedar cross ties and entire iron rails.

The experimental surveys have been extended much further than was supposed necessary when the work was commenced. They embrace in the whole about 200 miles of line. A summit of about 1,000 feet at the Canaan Gap, so called, about two miles this side of Massachusetts line, has to be overcome by any road running from the Hudson river in that direction. To reach that summit through a mountainous country, upon a grade so low as not to exceed 40 feet in the mile in any place, has required much examination. The measurements upon one line have suggested the propriety of making others, until they have been extended to the aggregate above stated. From my knowledge of the country, and from the opinion of the Engineer, I do not believe any further examinations will be necessary to enable the directors to decide generally upon the route to be adopted.

From the report of the Engineer made to you on the first of March, showing the business to be done upon the road, and regarding the accession of business within the reach of the company, by bringing the Lebanon Springs into their line, and the probable construction of the New-York and Albany road, bringing that travel also over the whole line, it cannot be doubted that this road will present some of the best railroad stock in the State.

S. Cheever, *Superintendent.*

July 9, 1836.

ENGINEER'S REPORT.

To the President and Directors of the Albany and West-Stockbridge Railroad Company.

Gentlemen: In compliance with the instruction received from the company's superintendent, I have prepared the following statements, estimates, &c. for the purpose of exhibiting to the board, at their meeting on the 4th instant, the present state of the surveys, as well as the different lines which have been run, their comparative cost, length, &c. so far as can be done with the information already obtained.

Experimental lines have been run over about 90 miles this season: commencing with a line from Greenbush to Bath, and thence towards New-Lebanon Springs, passing about two miles south of Sand-Lake; designated on the map accompanying this report, *Sand-Lake Route.*

The next line is one leaving the line run last fall at Malden bridge, and running up the valley of the Kinderhook creek; and thence on the south side of the Lebanon creek valley to Whiting's pond, which is the summit of all the routes passing through Lebanon. This route is called the *Lebanon Route.*

The next line run, follows the course of the one last mentioned, as far as the Lebanon creek valley, and then runs on the north side of his valley by the way of New-Lebanon springs, reaching Whiting's pond at the same point with the other. This, on the map, is called *Lebanon Springs Route.*

A line has also been run from the Hudson and Berkshire Railroad at Groat's tavern, intersecting the Greenbush line run last fall, (called Route A, in my report of March 1st, 1836,) at a point about 14 miles from Greenbush. This too is laid down upon the map, and called *Route to Groat's.*

The line of the Hudson and Berkshire Railroad, is also laid down upon the map, as a continuation of this route from Groat's to the State line; and likewise the entire line run during last season. These routes, it is believed, embrace all that may be considered worthy, on examination with the instruments. The lines run this season are, as above stated, experimental lines, run with a view to test the practicability of the routes, and not with such care as is necessary in locating a line; and of course the estimates based upon them, must be subject to the same imperfections; but since all the lines have been run in the like manner, it will not much affect their relative value; and it is believed that the final location will not very essentially alter the present estimate.

Profiles of all the routes have been prepared, to accompany this report; and estimates for two routes, viz: *Lebanon Springs Route,* and *Route to Groat's.* The profiles will show the gradients required on the different routes. It may be well to state, that in the Lebanon Springs Route the gradients may all be arranged, so that the gravity, and the increased friction on the curves, will in no case be greater than the gravity on a straight road, ascending at the rate of 40 feet per mile. The same may be said of the Route to Groat's with the exception of the first 2½ miles from Groat's towards Greenbush, where the grade must be 40 feet per mile without reference to the curvature of the road.

The *Sand-Lake Route* will require steeper gradients, say 50 feet per mile for four miles in leaving the river, and the same in many other places on the route. The *Lebanon Route* may all be so arranged as not to exceed 40 feet per mile, without reference to the curves.

In the following table prepared from the surveys and estimates, the *first* column shows the name of the route; the *second,* the length from Greenbush to the State line at West-Stockbridge; the *third,* the total amount of ascent in going from Greenbush; the *fourth,* the descent in the same direction; the *fifth,* an equivalent (going east,) in miles of level road; the *sixth,* the same for the opposite direction, allowing for half the amount of power on the descending portions of the road, that is required on a level road.

TITLE OF ROUTE.	Length in miles.	Ascent in feet.	Descent in feet.	East Miles.	West Miles.
Route A, of 1835,	36. 28/100	1.011	112	86. 83/100	29. 5/100
" by way of Leb. Springs,	41. 87/100	1.049	150	94. 32/100	34. 89/100
" to Groat's,	37. 67/100	1.084	185	91. 87/100	33. 53/100
Lebanon Route,	38. 87/100				
Sand-Lake Route,	43. 25/100				

The cost of all kinds of work, as well as materials wanted in the construction of Railroads, is much greater now than at the time the estimates for the routes run last season, were submitted. The prices, however, in the present estimates, are put down the same as then, in order to make the comparison of the cost of the different routes more perfect.

It is proper to remark, that the present estimates are for one track only, with turnouts every three miles; and I would take this occasion to say, that in all cases where the amount of business warrants a belief that two tracks will soon be needed, economy requires that the road should be graded sufficiently wide in the first instance for two tracks; and if wanted even remotely, to construct the bridges and culverts, and even the rock cuttings, with a view to the construction of a second track. I would add, that the plan proposed for the Western railroad, of which this is to be a continuation, is to grade for two tracks, and lay down one with turnouts to be used for the present—and then would recommend the same plan, as the one most economical in the end, and therefore best for this company to adopt. In the estimates, however, I have followed the letter of my instructions, and embraced nothing but what is necessary for the construction and convenient operation of a single track.

With regard to the amount of business for the road when completed, I would barely say, that this spring's observation has confirmed my opinion that the business was not over-estimated in the report of March last.

It may be well to remark, that the amount of business will be materially affected by the route adopted. It is well understood that if the southern route is taken, it will give the Hudson and Berkshire Railroad an opportunity to compete more successfully for that part of the business destined for Albany, and will add an inducement to the stockholders of the Troy and West-Stockbridge Railroad to submit to such grades as will allow them to go by way of New-Lebanon Springs. The northern route, by the way of the Springs, would add to the general business of the road, the sum of nearly all the pleasure travel to and from the Springs, which during the year 1835, amounted to 14,000 passages, and would no doubt be twice that number, or 28,000 passages immediately on the

opening of a railroad communication from Albany to the Springs. This travel always occurs at a time in the year when but little freight is offered, and consequently can be done without much additional expense to the company. In fact, the more advantageous grdae upon this route will compensate for the increased business, so that no allowance ought to be made on this account.

On the other hand, the aggregate cost of constructing the road by the northern route, is much greater than by the southern route, as will be seen by the estimates and comparisons given below. These are questions justly commending themselves to the attention, and to be desided by the action, of your honorable body.

ESTIMATES.

LEBANON SPRINGS ROUTE.

Sections No. 1, 2 *and* 3—17 $\frac{16}{100}$ *miles.*

From Greenbush to near the Kinderhook creek, as per estimate of 1st March last. $166,448 80

Average cost per mile is $9,699.81.

Section No. 4—6 $\frac{86}{100}$ *miles.*

For excavation and embankment,	$39,435 13
" bridges, culverts, land and fence,	17,860 00
" contingencies and superintendence, 10 per cent.	5,729 51
	$63,024 64

Average cost per mile is $9,909.53.

Section No. 5—13 $\frac{85}{100}$ *miles.*

For excavation and embankment,	$84,894 35
" bridges, culverts, land and fence,	37,014 00
" contingencies and superintendence, 10 per cent.	12,190 83
	$134,099 18

Average cost per mile is $10,044 88

Section No. 6—5 *miles.*

For excavation and embankment,	$20,186 89
" bridges, culverts, land and fence,	11,740 00
" contingencies and superintendence, 10 per cent.	3,192 69
	$35,119 58

Average cost per mile is $7,023.92.

Agregate sum for the whole route is	$398,692 20

And the average cost per mile for the same is $9,522.14

ROUTE TO GROAT'S.

Section No. 1 *and* 2—13 $\frac{15}{100}$ *miles.*

Total cost as per estimate of March last, is	$146,993 80

And the average cost per mile is $11,152.79.

Section No. 3—9 $\frac{60}{100}$ *miles.*

For excavation and embankment,	$49,516 86
" bridges, culverts, land and fence,	23,919 70
" contingencies and superintendence, 10 per cent.	7,343 58
	$30,771 44

Average cost per mile is $8,413.69.

Aggregate sum for grading to Groat's is	$227,765 24

And the average cost per mile is $9,998.47.

If we allow the same average cost per mile for the remaining distance to the State-line, which is 14 $\frac{80}{100}$ miles, and take half that amount for the proportion of the expense to be paid by this company, we have 74,438 61

Making $302,203 85

to be paid on account of grading the whole distance for one track.

For grading route by way of New-Lebanon Springs, we have, as per estimate above,	$398,692 20
" 41 $\frac{87}{100}$ miles of single track, at $5,100 per mile,	213,537 00
" 14 turnouts, $950 each,	13,300 00
" 44 miles of horse path $500 per mile,	22,000 00
Total cost of route by the Springs,	$647,529 20

For grading route by way of Groat's, as per estimate above,	$302,203 85
" 30 $\frac{23}{100}$ miles of single track, at $5,100 per mile,	154,173 00
" 10 turnouts, $950 each,	9,500 00
" 33 miles of horse path, $500 per mile,	16,500 00
Total cost of route by Groat's is	$482,376 85

And the total cost of route A, as per estimate of March last, is $586,280 78

The following table will show, at first sight, the length of each route, the cost of grading, the additional cost of superstructure, and the total cost of each route.

Route	Miles.	Grading.	Superstructure.	Total cost.
By the way of the Springs,	41.87	$398,692 20	$248,837 00	$647,529 20
By the way of Groat's,	37.67	302,203 85	180,173 00	482,376 85
By the way of Culver Hill,	36.28	367,802 73	218,478 00	586,280 73

It will be seen that the balance in favor of the southern route is $165,152.35; but it should be observed that in case the two companies determine to grade for, and construct two tracks in the first instance for that portion of the road to be used in common, which certainly ought to be done, then the first cost on that route will be increased by the sum of about $78,000, making the total cost of the southern route $560,376 85, and leaving a balance in the first cost of $87,152 35 in favor of the same.

That portion of the line common to both routes, viz. the first 13 miles from Green bush, can be located and put in order for contracting by about the middle of August, if required; and I would add, that the present seems to be a favorable time for letting work, on account of the recent indefinite postponement of the proposed letting of 112 miles of the New-York and Erie Railroad.

The prices remain high as yet, say about sixteen per cent. above what they were last year; and should they continue the same, it will add in the same proportion to the cost of the road.

All which is respectfully submitted,

WM. H. TALCOTT, Engineer.

Albany, July 2d, 1836.

From the Portland Advertiser.

THE GREAT EASTERN RAILROAD.

Regarding it as a time for the people of this neighborhood to wake up on the subject of *Internal Improvements*, as a matter of *self preservation*, all advantages being comparative—the writer wishes to put his fellow-citizens upon immediate inquiry.—The following letter, which was not intended for publication, is from Col. Long, himself, one of the ablest Engineers now living, and a man upon whose judgment the most cautious may rely with safety. It will speak for itself. The limits of a daily paper not allowing a full examination of the subject at once, the writer would hope that he may be allowed to recur to it *briefly*, again and again, before the meeting of the next Legislature, with a view to have the public mind thoroughly prepared for deciding the most momentous question likely to be presented for years. Perhaps it would be advisable to have a *public meeting* on the subject within a few days at furthest.

A NEW-ENGLANDER.

"I have just completed the reconnoisance of the Portland and Bangor Railroad, and am happy to assure you that its feasibility is far greater than I expected to find it at the time of our last interview. The steepness of its gradations, on several portions of the route between Portland and the Kennebec river, were somewhat discouraging, especially in the neighborhood of the Androscoggin. But on further examination I find difficulties of this nature far less numerous and formidable, on a route, which may be distinguished from all others by the designation of the "Foreside Route," which will cross Royal's and Cozins' River below their juncture, on a bridge perhaps half a mile long,—a branch of the Harriseckit river, at Porter's landing, by means of a bridge 300 yards long, and another branch of the same river by a bridge, of about the same length. These are by far the most expensive parts of the route between North Yarmouth and Brunswick;—added to the bridges across Back cove and Presumpscot River, the extent of bridging between Portland and Brunswick, will be about 1¼ miles. The route, to all appearance is free from ledges, on the entire distance;—its curvatures may readily be limited to 1000, perhaps 1500 feet, and its inclinations to 35, perhaps 30 feet per mile. From Brunswick to Gardiner I have discovered another route, far more favorable with respect to its gradations than that which I have examined previously to the date of our last interview. Instead of declivities of 60 feet per mile, we shall now be able to limit the gradations on the entire route from Portland to Bangor, to 35 feet per mile.

A more favorable route could not reasonably be expeeted; nor indeod a route more worthy of public patronage.

In advocating works of the character here contemplated, it should be borne in mind that at least ⅔ of the money expended in the construction, will remain in the State, while less than ⅓ probably will be raised in the State. The State will no doubt realize many fold, the prime cost of the road, in the increased value of real estate, consequent on its construction. The *hue and cry* should never be raised against monopolies, when the community is ten dollars better, for every dollar that is put into the pocket of the monopolist.

But I will hazard no more of my speculations at present. With an ardent hope that New-England will retrieve her character for enterprise, by embarking zealously in the cause of Railroads; I remain, dear sir,

Very respectfully, your ob't. servant,

S. H. Long.

AN ADDRESS TO THE CITIZENS OF HARTFORD, ON THE BIRTHDAY OF LINNÆUS: MAY 24TH, 1836. IN BEHALF OF THE OBJECTS OF THE NATURAL HISTORY SOCIETY; FORMED OCTOBER 8, 1835. BY SAMUEL FARMER JARVIS, D. D., PRESIDENT OF THE SOCIETY, &C., &C.

LINNÆUS.

In 1732, a poor and friendless stranger from a little town in Dalecarlia, presented himself at Leyden to the illustrious Boerhaave. His indigence was so great, that when in college he had been obliged to wear the cast-off shoes of his fellow-students; and though after he had left Upsal, he gained a little money by the practice of medicine, yet by the time he arrived at Hamburg all his resources were exhausted. He persevered, however, in making his way to Holland; and the great physician whom I have named recommended him to a rich proprietor of the name of Clifford, who had a taste of natural history, and possessed at Hatecamp, between Leyden and Hærlem, a magnificent garden, cabinet, and library. In this hospitable abode he remained for three years, enjoying abundantly all the assistance necessary for his favorite studies. Need I tell you that this poor stranger, thus indebted to the munificence and love of science of one rich individual, was the great Linnæus!

In 1735 was published at Leyden, the first sketch of his System of Nature, or the three kingdoms of nature systematically set forth, by classes, orders, genera, and species. It consisted of three tables, each contained in a single sheet; and this, with another treatise of twenty-six pages published the following year, contained the germ of all that he afterward wrote. This work of twenty-six pages, contained, in the form of aphorisms, the theory of botany; and it was the result, as the author informs us, of seven years' study, and the examination of eight thousand plants. It was followed in successive years by three other works, which laid the foundation of the great revolution in botany; and fifteen years afterward, the whole was condensed in an octavo volume, containing proofs in every page of the most subtle intellect, and a most astonishing depth of observation. This single volume has become the fundamental law, the constitution, as it were, of the science; a constitution acknowledged and reverenced by botanists of every nation; and notwithstanding the immense quantity of plants since accumulated, and the innumerable facts which skilful observers have since added, principally on vegetable anatomy and the internal structure of fruits and seeds, his system of Linnæus is even now in full vigor.

It has become, indeed, in some sense, a universal language; and in every country, however remote, where a scientific botanist or even a skilful gardener is to be found, it is sufficient, in order to be understood, to designate a plant by its Linnæan name.—It was not, as we have seen, the discovery of the sexual system which gave Linnæus his fame and his sovereignty. That discovery is claimed by England; and it preceded the time of Linnæus half a century.—It was rather the distinctness, the regularity, the energetic precision of his system, and especially the convenience of what he called the *trivial*, or as it is now termed, the *specific* name, which gave him this authority. This last simple contrivance alone by which the overburthened memory of the botanist was relieved from the constant accumulation of long descriptive phrases, was found so useful, that, dating from that epoch, he reigned over the botanic world without a rival.

LINNÆRS, BUFFON, AND DAUBENTON.

For nearly a hundred years, the royal garden of plants at Paris, the establishment of which was coeval with that of our city, was greatly neglected, and its revenues were appropriated to other objects.—But in 1732, the superintendence of it was separated from the office of the first physician to the king, and confided to Charles Francois Du Fay, who soon rendered it the finest garden in Europe. He died in 1739, and on his deathbed recommended Buffon as the only man who seemed to him capable of following out his plans. Buffon was a few months younger than Linnæus, and survived him about ten years. Their characters were essentially different. Linnæus was methodical, patient, concentrating, and concise; Buffon despised system, was brilliant and imaginative, diffuse and fond of ornament. Eminently fitted to render a subject popular when the materials were collected and laid before him, he was utterly incapable of that minute, and accurate, and unwearied observation, which are so essential to the science of the naturalist.—Happily he had for his associate Daubenton, whose qualities were precisely those in which Buffon was defective. The collection of facts with which he enriched the history of animals is immense; and the care with which he observed them was so great, that Cuvier has given him a praise, which from any other mouth would have seemed extravagant: *in vain do we look for an error.* He described only what he had seen himself. He did not even draw those general conclusions which most naturally arise from established facts; and his timidity in this respect was so cautious, that Camper said of him, he did not himself know how many discoveries he had made.

It was unfortunate for the interests of science, that Buffon appears to have treated him unkindly in permitting an edition of the History of Quadrupeds to be published, in which the description and anatomy of Daubenton were suppressed. In consequence of this, he refused any further cooperation in the work; and in the history of birds his place was poorly supplied by Guineau de Montbelliard and the Abbe Bexon.

After what has been said of Buffon, it will no longer excite surprise that, in the popular estimation, his fame should so entirely have eclipsed that of Linnæus.—Another cause of his celebrity was, the advantage he possessed in the superintendence of the garden of plants, and the facilities afforded him for forming collections in a city which had become the capital of the scientific world.

Two schools of natural science were now formed; the one pursuing the system of the Swedish naturalist, the other following the more popular course of the brilliant Frenchman.

Time would not permit me to do more than name the individuals who formed these respective schools; and I therefore purposely omit them, lest among so many I should commit injustice by selection.—From 1735 to 1798, when Cuvier published his first work, twenty-eight authors are enumerated on Entomology alone;* each of whom have contributed, more or less, by their observations, to enrich the history of insects. Of these, there were, one Italian, two Danes, three English, three French, three Swedes, three Swiss, four Dutch, and nine Germans. In the other departments, authors have not been so numerous, but the whole science has been carried forward with an impetus truly astonishing. The French, the Germans, and the English have vied with each other in this generous and noble rivalry.

If the French have surpassed all other nations, it must be attributed to the possession of such a treasure as their cabinet of natural history. It may be said to have been created by Daubenton, and has ever since been continually augmented by the zeal of individuals and the patronage of government. Even in the stormy times of the Revolution, when a political frenzy seemed to have seized the whole nation, this splendid monument of science, though for a time neglected, and deprived of its support, was spared, and finally patronized. It was in the spring of 1795 that Cuvier first visited the French capital, and in July of the same year was appointed assistant lecturer of comparative anatomy in the garden of plants. Here, in a lumber-room of the museum of natural history, he found four or five old skeletons, collected by Daubenton, and cast aside by Buffon.

It is interesting to trace from their commencement the history of noble institutions, and to see how much can often be done by the persevering industry of a single individual. These skeletons Cuvier made the basis of his museum, and, encouraged by some professors, though opposed by others, went on in the formation of it with untiring effort. In less than forty years, and within the compass of his own invaluable life, that museum has become one of the

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* See Dumeril.

wonders of the age, and, together with its immortal author, has created a new epoch in the history of natural science.

GEOLOGY.

The practical knowledge of this branch has been as old as the attempts of man to explore the hidden treasure of the earth; and the regular formation and succession of strata, together with the disturbances occasioned by earthquakes, volcanoes, and inundations, have been remarked at a very early period. The existence, also, of organized bodies in a fossil form, embedded in several of those strata, has been for centuries the occasion of wonder and perplexity. I should weary my readers were I to tell them of all the crude conceptions, and absurd fantasies invented to account for these phenomena. They were such as absolutely to bring geology into contempt; and it was by many regarded as a visionary employment of the human intellect, till the work of Cuvier on fossil organic remains gave it a new character, and produced throughout the world the sensation of a surprising discovery.

The method of considering each separate organ, and tracing it through the whole series of animals, had led him to certain general and invariable laws of combination, by which the possession of one series of bones would indicate the necessary connexion of another series. A beast of prey, for instance, would always have teeth fitted to devour that prey, and claws fitted to seize it. A ruminating animal, on the contrary, would have hoofs instead of claws, and teeth fitted only to grind its vegetable diet. In this way, the possession of even the fragments of an animal would enable him to complete its whole structure, and determine to what genera or species it belonged.

Aided by M. Brogniart, an eminent geologist, Cuvier commenced his researches at Montmartre, and in the quarries of gypsum in the environs of Paris. These had, for many centuries, furnished the building stone of that metrepolis, and had been sunk to the distance of two hundred and 43 Paris feet. About fourteen or fifteen feet below the surface, there are strata of marine formations, attesting the presence of salt water, which have altogether a thickness of nearly seventy-seven French feet. Below these incontestible proofs exist of a soil anciently inhabited by quadrupeds of different species, reptiles, birds, and fresh-water fish.—Below these are still deeper strata, containing productions of the sea By collecting the scattered bones of these animals and reproducing their forms, according to the unerring rules of anatomical science, Cuvier discovered one hundred and sixty-eight vertebrated animals, forming fifty genera, of which fifteen are no longer in existence. Many of the individuals, even of existing genera, are of enormous size; and what increases the wonder, they are such as are now found only in other regions and other climates. No trace was found of human skeletons, or of the order quadrumana.—Almost the entire skeleton was discovered of a species of opossum, an animal which now exists only in America; and this single fact at once overturned the theory, that the American genera had come from their own soil, and had never extended themselves to the other portions of the globe.*

I shall add no more on this subject, excepting to state, that all the subsequent researches of geologists, of every nation, have confirmed the truth and the importance of this great discovery. The natural evidenees of a sudden and universal deluge, and the probability of the Mosaic chronology, have been set forth with a force of truth which has borne down all opposition; and although there are still great and very embarrassing difficulties to check the pride of human knowledge, the Christian philosopher is encouraged to wait with patience, till some other bright discovery shall

"Vindicate the ways of God to man."

INFLUENCE OF SCIENCE ON RELIGION.

Finally, let me address you as Christians, and ask, what occupation can produce nobler views of the divine nature and providence than the contemplation of His works? The pages of inspiration tell us that the invisible things of God, namely his eternal power and godhead, have been clearly seen, since the creation of the world, being understood by the things that are made. It has been objected, I know, that many who have been warmly engaged in pursuits like ours, have, while surrounded by the wonders of creation, been unmindful of the great Creator. That such has been the fact, though to an extent far less than the objection assumes, we are not disposed to deny. We object, however, to the inference which some have thence drawn. We atttribute this result rather to the influence of a little knowledge on the corrupt heart of man, than to the extension of knowledge. We believe that "the knowledge which puffeth up" is eminently superficial; and in examining the progress of all sciences, we find, that proud presumption may accompany incipid discovery, but that more perfect investigations are invariably followed by profound humillity. Alphonso, of Castile, when the light of astronomical science first dawned, through his instrumentality, on the darkness of his age, could exclaim, that if he had been admitted to the counsels of the Creator, he would have arranged the universe better. He saw that the movements of the heavenly bodies could not be reconciled with what was then supposed to be the planetary system; and instead of doubting the correctness of his own knowledge, he dared to question the wisdom of the Almighty. How different on the mind of Newton was the effect of his sublime discoveries! With what awe do we behold that profound intellect, covering its face with its own wings, like the burning seraphim before the throne of God!* As

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* See the memoir of Cuvier, "Sur le Squelette presque entier d'un petit quadrupede du genre des Sarigues trouve dans la pierre a platre des environs de Paris," in the third volume of his "Ossemens fossiles." "This rich collection," observes the distinguished discoverer, "of the fragments and skeletons of the animals of a former world is doubtless a wonderful circumstance. It has been amassed by nature in the quarries which environ our city, as it reserved by her for the researches and instruction of the present age. Each day we discover some new relic; each day adds to our astonishment, by demonstrating more and more, that nothing which then peopled this part of the globe has been preserved on its present surface. There is scarcely a block of gypsum in certain strata which does not contain bones. How many millions of these bones have been already destroyed since these quarries have been dug, and this gypsum has been employed in building! How many are, even now, destroyed by mere carelessness! How many, by their minuteness, escape the observation of the most attentive workmen! One may judge of this by the fragment I am about to describe. The lineaments there imprinted are so slight, that to detect them we must view them closely.—Yet how precious are these lineaments!—They are the impress of an animal of which we find no other traces; an animal buried perhaps for thousand of ages, now reappearing, for the first time, to the eyes of the naturalist." He then proceeds, according to his method of induction, to show, in a very clear and satisfactory manner, that it can be no other than the American opossum; after which he concludes as follows: "I will not dilate upon the geological consequences of this memoir. It is evident to all who are even slightly conversant with the systems relative to the theory of the earth, that it overthrows nearly all of them, in what relates to fossil animals. Hitherto it has been thought that our northern fossils were only of Asiatic animals. It was admitted that the animals of Asia had passed into America, and had been buried there; but it seemed that the American genera had issued from their own soil, and had never passed into the countries which now form the old continent. This is the second proof" (the Tapir was the first) "which I have discovered to the contrary. And persuaded as I am, of the futility of all these systems, I am happy every time that one of them is destroyed by a well established fact. The greatest service which can be rendered to science, is to clear the ground before we proceed to build; to begin by demolishing those fantastic structures by which its avenues are choked, and which deter from such occupations those who have happily become habituated, in the exact sciences, to yield only to evidence, or at least to class propositions according to their degrees of probability. With this last precaution there is scarcely any science which may not become almost geometrical. The chemists have lately proved this with regard to their science; and I hope the time is not far distant when the same may be said of anatomists." If an apology be required for this long note, I hope it may be found in the interest which every American must feel, in a fact so eventful and extraordinary as that which has given rise to it.

* How sublime is the thought with which Newton closes his treatise on optics! The whole universe, all material things, from comets and planets down to the bodies of animals, the organs of sense and motion, and the instinct of brutes and insects, "can be the effect of nothing else than the wisdom and skill of a powerful everliving Agent, who, being in all places, is *more able by his will to move the bodies within his boundless, uniform censorium, and thereby to form and reform the parts of the universe, than we are by our will to move the parts of our own bodies.*" So in his Principia; "Deum summum necessario existere in confesso est. Et eadem necessitate *semper*

the occasion of man's fall was an irregular desire of knowledge; so is it a part of that wisdom by which the Almighty seeks to lead us back to our paradise and to his presence, to surround us with wonders which give us constant and inexhaustable subjects of inquiry, and, at the same time, humble us by the perception of how little we can know without his aid.

It is thus with the science of natural history. The farther we advance in knowledge, the better do we perceive how much we do not know, and this perception must forever abase the most profound naturalists. "The minute philosophers," to borrow an epithet of the great Berkley, "may think, for a time, that their boasted discoveries are irreconcileable with revelation. They may raise the sand hills of their systems, and think from them to demolish the fortress of the divine word. Vain and impotent the attempt! Some fortunate discovery, as science advances, demolishes the whole by a single roll of its mighty waters, and the next wave washes it into eternal oblivion. Let us not fear, then, that revelation can ever be seriously assailed, or injured, by philosophy. It may sometimes be wounded in the house of its friends, by too great a degree of sensitiveness, which may prompt them to embrace untenable theories, and distort the language of the bible, to make it accord with what they consider as the result of experiment."*

INFLUENCE OF REPUBLICAN INSTITUTIONS ON SCIENCE.

We boast, and I for one am not disposed as yet to allow that we boast in vain, of exhibiting to the world the grand experiment, such as the world had never before seen, of a people governing themselves. We govern, and are governed, in a manner wholly inexplicable to the theorist of the old world. Not a soldier is to be seen in the wide extent of this immense republic, excepting on our frontiers. We govern, and are governed, by the will of the majority. Order is preserved, because it is the instinct of self-preservation; and every man knows, or ought to know, that his life, and liberty, and property is bound up in the life, and liberty, and property of the community.

In Europe, the interest of the whole is made subservient to the interest of individuals. In America, that of individuals is subservient to the good of the community. The interest of society is oftentimes sacrificed in Europe, to promote the interest of the individual; the interest of the individual, on the contrary, may be, and often is, sacrificed in America, to promote the interest of the public.

No doubt these are evils; and they are the evils of opposite systems. In this checquered state of being, where good and evil are the web and woof of the moral texture, the mixture cannot be avoided. It would be out of place for me to say, which system has the most evil or the most good; but let us take our system as it is, and ask whether it excludes scientific improvement? I answer, No. The monarchist of Europe asserts it, but we are not disheartened by the assertion. Our mighty experiment of self-government is far from being exhausted. We have not, it is true, the energy of despotic power which can command schools and colleges to spring into existence, can at once turn the stream of a nation's resources to the formation of cabinets of science, or the fine arts. But we have a nation, every individual of which feels that he is bounded only by the extent of those powers which GOD has given him; and the very basis of our institutions is, that every member of the republic is under a moral tie, that through him it should receive no detriment. We cannot by decree, transport from distant lands the granite rock, to serve as a pedestal for the statue of an emperor, but we can, by the subscription of a dollar, through the millions of our nation, erect a prouder monument to the memory of our Washington.

To this power, then, we appeal in behalf of natural science; and we ask our fellow-citizens to aid us in the establishment and maintenance of an institution the object of which is to promote the common good, by affording to all the means and opportunities of knowledge.

In our state of society, union is eminently strength; but as it would be vain to talk of colors to one who was born and continues blind, so will it be impossible to produce that union by which society may be exalted and refined, unless we extend the boundaries of intelligence. To dwell on the importance of diffusing a more perfect system of education might seem foreign from the present purpose; yet I may be permitted to quote the farewell advice of him who was first in the hearts of his countrymen, as a maxim of political and moral wisdom. "Promote, as an object of primary importance, institutions for the general diffusion of knowledge. In proportion as the structure of a government gives force to public opinion it should be enlightened."*

I hope that the day may come when, by private munificence, our public institutions shall be so well endowed as to render all instruction gratuitous; when the means of acquiring knowledge shall be as common and asfree as the air we breathe; when the poorest member of our community may feel that he has an undivided share in the privileges which ennoble his nature; and when, by the equalizing power of Christian charity, "he that hath gathered much shall have nothing over, and he that hath gathered litttle shall have no lack."

CONTRIBUTIONS OF MISSIONARIES TO NATURAL SCIENCE.

The missionaries sent by the various religious denominations, either into our own territories, or into foreign countries, are, in general, educated men, and may do much to promote the cause of natural science, without any interruption to the duties of their profession. The example of the Roman Catholic missionaries is before our eyes; and the value of their labors in the cause of science is universally admitted. Little is known of China but what has been furnished by them. The French Jesuits, especially, have added greatly to the store of natural knowledge; yet no one can accuse them of neglecting their official duties.† Why, then, may not our

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est et *ubique*. Unde etiam totus est sui similis, totus oculus, totus auris, totus cerebrum, totus brachium, totus vis sentiendi, intelligendi et agendi; sed more minime humana more minime corporeo, more nobis prorsus incognito. Ut cæcus ideam non habet colorum, sic nos ideam non habemus modorum quibus Deus sapientissimus sentit et intelligit omnia. Corpore omni et figura carporea prorsus destituitur, ideoque videri non potest, nec audiri, nec tangi, nec sub specie rei alicujus corporea coli debet. Ideas habemus attributorum ejus, sed quid sit rei alicujus substantia minime cognoscimus." Lib. iii. De mundi systemate.

* It is refreshing to see that such a mind as that of Cuvier, in a country over which infidelity has swept like the pestilential wind of the desert, could be profoundly philosophical without loseing the sense of its own weakness in the sight of GOD. Cuvier was a believer, and openly professed his belief. While he sought as a philosopher to pursue the researches of natural science, and to establish results from experiment and observation, independently of the authority of Scripture, it would be vain to seek in his writings any evidence that his experiments or observations shook his faith. If, then, any fact which he has established should seem in any wise inconsistant with the Scripture history, let us wait, and not draw conclusions, till some further accession of knowledge may enable us to see the difficulties removed, and thus convince us that they were formed solely by our own ignorance.

* Washington's Farewell Address.

† No better example can be given of the acuteness exhibited by the Jesuits in their scientific researches, than the manner in which the Panax Quinquefolium or Ginseng was discovered in America. This plant it is well known, is very highly esteemed for its medical virtues in China, and when prepared by clarification, is worth its weight in silver. As it is in their opinion a panacea, Linnæus gave it the name of Panax. The Jesuits, having been employed by the emperor to draw a map of Tartary from actual survey, arrived in July, 1709, at a village within ten or twelve miles of the kingdom of Corea, and near the mountains where the Gin-seng is found. Father Jartox received four roots from a Tartar, and taking one of them at random, he made an accurate drawing of it, which he sent to his superior in France, together with a map of the country where it grows, between N. lat 39° and 47° and E. lon. from Pekin 10° and 20°. He stated that it grows not in valleys, nor in marshes, nor in the bottom of ravines, nor in very open places, but on the sides of mountains covered with thick forests, around rocks, on the borders of ravines, at the foot of trees, and in the midst of every variety of herbage. If the forest should be consumed by fire, this plant does not reappear till three or four years afterward, which proves that it is an enemy of heat. In fact it conceals itself from the sun as much as possible. "All this," adds Father Jartoux, "makes me believe that *if it can be found in any other part of the world, it must be principally in Canada.*" In consequence of this suggestion, Father Lafiteau, a J suit missionary in Canada, was directed to search for it, and with the assistance of the drawings and descriptions of Jartoux, and the aid of

missionaries, as a useful relaxation from their arduous labors, furnish us with collections, and with much curious information, respecting the natural history of the country in which they sojourn?

INTEREST OF EUROPEANS IN AMERICAN RESEARCHES.

That there are many in Europe who are eagar to form a correspondence with Americans, in the hope of exchanging the productions of the old world for those of the new, I can bear personal testimony. In Italy, several distinguished men spoke to me with ardor, and even with anxiety, on this subject. At Turin, the distinguished ornothologist, Bonelli, told me that he could furnish us with all the European birds enumerated by Temmick, if we would send him an equal number of American birds. Bonelli, alas! is no more; but he has left pupils who are following in his steps, and who, no doubt, would be glad to revive his offer. Dr. Grottanelli, of Sienna, offered to furnish us with minerals and plants on the same conditions. The younger Bartelone, of Bologna, would, I have no doubt, undertake the same pledge with regard to insects. In this manner we may, by our own labors, and by this scientific commerce, gradually form a collection the influence of which on the future character of our community, may be more extensive than we have now capacity to calculate. It is only during the feeble period of infancy, that such institutions require to be fostered with peculiar care. That period past, their existence can hardly be called precarious.

Silk Cocoons have been left at our office from the House of Industry, at South Boston. They are from eggs this year, a second crop. The worms came out August 20th, were kept in an even temperature of about 70° and spun in thirty days.—[New-England Farmer.]

INDIANA IMPROVEMENTS.—A grand festival took place at Brookville, Ind., on the 15th ult., to mark the commencement of the White Water Canal. Upwards of 4,000 persons, it is estimated, were present, among whom were the most distinguished citizens of the State. The work, or a great portion of it, was put under contract the next day at Lawrenceburgh.

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the natives, he actually found it. He published an account of his discovery in 1718, and the American root became for a time, till the market was overstocked, an article of great commerce with China, and the source of much wealth. The word *Ginseng*, Jartoux adds, signifies in Chinese, "the representation of a man;" for what reason he cannot tell. The Tartars call it *orhota*, which means "*the first of plants.*" See the original letter in the Lettres Edifiantes et Curieuses, vol. xviii. p. 127, of the new edition, and in the old edition, Tom. x. p 159. See also Du Halde Hist. de la Chine, where it is copied word for word, vol. ii. p. 150, &c. A good abstract of the whole is to be found in Bigelow's Medical Botany, vol. ii. p. 82–96, and Barton's Medical Botany vol. ii. p. 191–202. My attention was first directed to this fact by Dr. Barratt.

AGRICULTURE, &c.

MINERAL MANURES.

Application of Marl.

(Continued from our last.)

In the earliest stages of improvement in the Norfolk husbandry, some farmers, from experiencing the evils of a want of firmness in their poor sands, marled at the rate of 120 to 150 cubical yards per acre; the consequence of which was what they call *setting*: the firmness was produced, but at the expense of the friability of the soil, which was thus rendered too tenacious, so that it is at present found preferable to give a moderate dose at first, and to repeat it at a future period. This prejudicial effect, arising from marl, is very remarkable; for the clay, sand, and lime of which it is composed would not, if thrown promiscuously over a field, produce the same effects; and when laid upon the land, they indicate no improper proportions, nor any which are not found in very rich soils. It may, therefore, contain other ingredients which have not been detected by chemists; and, as has been imagined—perhaps not unjustly—by Arthur Young, "it arises from the addition not being so well assimilated with the sand, as in soils of a natural texture it is rather a mixture than an incorporation."* There is, indeed, reason to suppose that marl derives much of its beneficial qualities, as a manure, rather from the complete amalgamation of the various substances of which it is composed, than from any other cause.

Mr. Marshall, in his Rural Economy of Norfolk, enters into a chemical investigation of the nature of the marls, which, though too long for insertion here, is well worthy of attention; in which he describes that of the white, or rather yellow kind, as one of the best and most lasting species of fossil manures. Twelve cart-loads—according to his account—change the nature of the land in the second year after it is laid on; and most of the exhausting weeds which impoverish the soil, and choke the corn in its infancy, being effectually destroyed, it consequently has a great tendency to keep the land clean; also bracing the pores of the earth, and increasing its fertility to a surprising degree. Its benefits, he says, are felt throughout full thirty years; when a second marling of about half the original quantity may with propriety be used; but it has been found, by experience, that it does better the secone time, if applied as a compost with earth of a sort different from that of the soil on which it is laid; or with mud, and more especially with dung. To this it may also be observed, that lime is not unfrequently added: though, as lime and marl both partake of the same properties, the mixture of the former only has the effect of strengthening the compound.

It thus appears that not only do the species of marl vary in several parts of the kingdom, but in some parts there are kinds which, though seemingly quite distinct from each other, have yet been found, on trial, to possess precisely similar qualities; for we learn that experiments on a considerable scale have been tried in the New Forest, in Hampshire, on three different sorts, dug out of the same pit, namely,—yellow, at about four feet below the surface, blue in the middle, and shelly-marl underneath; and yet, although from all the accounts which have been received of the latter, its properties are superior to those of the two former, still, in these instances, no other difference was observable in the crops during many years, except that the shell-marl rendered the land rather the most friable.*

That marl materially benefits land on which it is judiciously used, admits of no kind of doubt. Much difference of opinion is, however, entertained respecting the manner in which it operates—most farmers conceiving that its only value consists in the calcareous matter with which it is combined; others, that its principal advantage arises from the bulk and consistency which it imparts to the ground; and some, that the improvemement which it occasions is chiefly owing to its mechanical action on the texture of the soil. Upon an attentive consideration of the subject, it will, however, appear, that a certain portion of its utility as a manure is derived from each of the three sources which have been assigned. With regard to calcareous earth of which it is partly composed, it clearly possesses, in extent equal to the proportion which it contains of that substance, the same power that would be produced by the direct application of a similar quantity of lime. It is, however, apparent that some descriptions of marl, though advantageously employed on most soils, do not contain any, or only a very small portion of the carbonate of lime; its efficacy therefore cannot be solely attributable to that cause,† and it must possess some other property from which its influence upon the land is partly derived.—This may consist either in the change which its application produces in the texture of the ground through the mere increase of its bulk, which by its dense and unctuous quality, also adds to the consistence and value of all light soils; or, by the more perfect combination of the particles of which it is formed, by which its powers are brought into full action, and lime, sand, and clay are each made to bear against each other, and thus aid its mechanical operations on the land. All marl, except those species which are combined with large portions of iron, sulphur, or deleterous mineral substances, also of itself affords nourishment to

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* Papers of the Bath Agricultural Society, vol. x. p. 108.

* Communications to the Board of Agriculture, vol. vi. art. 3.

† Out of twelve specimens of marl submitted to the inspection of Sir Humphrey Davy, eleven were found to contain calcareous earth in various proportions; but the result of many other trials of marls, procured from different parts of the country, and found by farmers to produce an ameliorating effect upon the land, yet proves them to be, in many instances, wholly deficient in that substance. See the section on "Marl," in Holland's Survey of Cheshire.

corn and vegetables; it must, therefore, be considered as a soil, and when laid upon the land this addition must necessarily yield a more abundant support to succeeding crops.

If this view of the subject be correct, it may be assumed, that all kinds of marl which abound in calcareous matter may be considered applicable to every soil to which lime is beneficial; subject, however, to the effect which may be also produced by the other portions of their substance when applied to land of a peculiar nature. Thus—as we have already more fully stated in the preceding part of our observations—on light, sandy, and gravelly soils, an advantage is gained by the large quantity of clay which the marl appropriate to such land usually contains, by rendering them more stiff and impervious to the rain, and therefore stronger: on wet and heavy lands, on the contrary, as it renders the soil more retentive, unless very great care be bestowed on their drainage, it may occasion permanent injury; but shell and stone-marl occasion it to become loose and friable. Attention should therefore be paid, not only to the nature of the marl, but to that also of the soil to which it is to be applied; and when a choice of marl can be procured, its earthy portion should differ as widely as possible from that of the ground upon which it is intended to be laid.

In fine, marl may be considered as an improver of the soil under so many different circumstances, that it can hardly be recommended in too strong terms; for if it be used with judgment, it adds staple to the soil, improves its quality, and renders the application of putrescent manure more effectual. The use which some farmers make of it, however, deserves the highest censure,—'many of them taking repeated crops of oats in the interval of one summer-farrow for wheat, by way of cleansing the land; after which, barley and oats again, as long as the land will produce anything, until it is at last laid down with weeds and couch-grass. Such is the view taken of their conduct by the surveyor of Lancashire, where it is very extensively employed, and in which opinion he is by no means singular. The rotation which he recommends—with reference, of course, to land that is not too strong—is to take one crop of oats the spring subsequent to marling; plough the stubble immediately, in order to expose the marl again to the influence of the frost; fallow, with manure, for turnips—a crop which, under this management, is never known to fail; then barley, clover, wheat, turnips fed off with sheep, and barley again, with well-dressed hay seeds, and white clover and trefoil for a perennial ley, or at least for some years*. Under which management, poor land may, when properly tilled and duly supplied with putrescent manure, be rendered highly exuberant without being in the least degree harassed.

Analysis of Marl.

The value of marl, as a manure, must of course be referable to the nature of the different kinds employed. It is, indeed, evident that, being intended to correct or improve the soil, its constituent parts should be known, and their qualities explained, before any use can be rationally made of it; and, therefore, the more accurately its properties are ascertained, the more confidently may the propriety of its application be determined. Farmers, indeed, cannot be expected to be sufficiently acquainted with chemistry to be able to analyze it, though the most calcareous sorts may be known by means of acids, as applied to lime; or, the common earthy kind, when put into water, will fall to pieces, allowing a considerable portion of sand to fall to the bottom of the vessel: by which simple tests, they might often derive considerable advantage. Its qualities are, however, more generally taken, by mere practical men, more upon trust derived from the experience of their neighbors than from any actual knowledge of its properties; but although, when thus guided, they cannot go far wrong, yet they may be misled by circumstances of slight apparent difference, and, in cases of new pits being opened, no certain estimate of its effect can be formed until a complete analysis has been made. This should, indeed, be done in all such instances; for it costs but a trifle, is easily performed, and without having recourse for the purpose to a regular scientific chemist, the object may be attained by application to any intelligent apothecary, by furnishing him with the following account of the modes of procedure:—

The ingredient of marls, on which their fitness for agricultural purposes depends, is the carbonate of lime. It is owing to the presence of this earth that marls effervesce on the addition of acid, which is one of the distinguishing characters: to ascertain which—

'Let the marl be put into a glass partly filled with water, which will expel a portion of air contained mechanically in the marl, and thus obviate one source of fallacy.—When the marl is thoroughly penetrated by the water, add a little muriatic acid, or spirit of salt. If a discharge of air should ensue, the marly nature of the earth will be sufficiently established.'

Then, to find their composition—

'Pour a few ounces of diluted muriatic acid into a Florence flask, place them in a scale, and let them be balanced. Then reduce a few ounces of dried marl into powder, and let this powder be carefully and gradually thrown into the flask, until, after repeated additions, no further effervescence is perceived. Let the remainder of the powdered marl be weighed, by which the quantity projected will be known. Let the balance be then restored. The difference of weight between the quantity projected, and that requisite to restore the balance, will show the weight of the air lost during the effervescence, and will stand thus,—

'If the loss amount to 13 *per cent.* of the quantity of marl projected, or from 13 to 32 *per cent.* the marl assayed is calcareous marl, or rich calcareous earth.

'Clayey marls, or those in which the argillaceous ingredient prevails, lose only 8 or 10 *per cent.* of their weight by this treatment; and sandy marls about the same proportion. The presence of much argillaceous earth may be judged by drying the marl after being washed with spirit of salt, when it will harden, and form a brick*.

Though it is well known that Mr. Pedder has returned from Europe, we cannot but give the following letter and information as a preparation for his recent work.

From the Boston Commercial Herald.

BEET SUGAR.—The immense benefits to be expected from introducing the Sugar Beet into the United States, had for a considerable time occupied the attention of James Ronaldson, Esq.; when in the month of January last he was introduced to Mr. James Pedder, a gentleman who possessed information on the subject of the Sugar Beet. Mr. Pedder had been long known to John Vaughan, Esq., who, with Mr. Jacob Snider, Jun, now took a lively interest in the concern, and after several interviews it was determined to despatch Mr. Pedder to France, with the view of obtaining accurate information on all subjects, connected with the culture of Beet and the uses to which it is applied. The responsibility and expense of this undertaking were assumed by Messrs. Ronaldson, Vaughan and Snider, in the confident belief that they would be sustained by their countrymen in this laudable undertaking. It was important that Mr. Pedder should be despatched immediately in order to witness the process of making Sugar in France, and to send out seed in time to be planted in the United States the present season. Mr. Pedder left Philadelphia on the 8th day of February, and his mission has been attended with the most gratifying success, nearly 600 lbs. of seed having already been received and portions of it distributed through various parts of the country. Several patriotic individuals have made contributions towards defraying the expenses of this undertaking, in sums of from ten to fifty dollars each. But the amount yet received is inadequate to the expenditure. An association has been formed of which Mr. James Ronaldson is President, John Vaughan, Vice President, and Jacob Snider Jun. Secretary and Treasurer. The object of this society is to collect and disseminate information for the benefit of the community generally without any view to pecuniary emolument. Further contributions in aid of this object are respectfully solicited, and will be received by the following named gentlemen:

JAS. RONALDSON, Esq. President, corner of 9th and Shippen sts.,
JOHN VAUGHAN, Esq. Vice President, 32 Walnut street,
JACOB SNIDER, Jun. Treasurer, and Secretary do.

Managers.

Samuel Richards, Esq., Arch, above 9th,
Nathan Dunn, Esq., Portico Row,
Joseph D. Brown, Esq, Church Alley,
Isaac S. Lloyd, Esq, Penn Square,
Samuel Breck, Esq.,
J. S. Lovering, Esq. Church Alley,
B. M. Hollinshead, Esq., No. 14 North 6th street,

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*Dickson's Lancashire, Stevenson's edit., p. 491.

*Henrys' Elem. of Exper. Chem., vol. ii. chap. xv. sect. iii. See also Kirwan on Manures, p. 12.

Joseph Sill, Esq , Chesnut-st, opposite State House,
John Richardson Esq., 10th, near Arch-st.
James Wood, Esq.,
Frederick Brown, Esq., 5th and Chesnut street.
Geo. Zantzinger, Esq., 25 Dock street.

As an increased interest is being manifested on this subject, we have solicited and obtained from Mr. Snider, Treasurer and Secretary of the "Beet Sugar Society," extracts from various letters received by him from James Pedder, Esq. the agent of the society, who is now in France seeking information relating to the Beet root, and manufacture of sugar. According to our notice on Saturday, we now give the extracts.

BOULOGNE, March 11, 1836.

"I begin by saying, if in such a climate, with such a very inferior kind of Beet, the common Mangel Wurtzel, of all colors, hollow and half rotton, they are able to obtain nine per cent. of Saccharine, America is a gold mine. The crushing mill is driven by five bullocks in harness, the roots are pressed towards a revolving barrel, set with teeth and the pulp falls into a box below,—a boy takes about a gallon of this pulp and puts it into a bag which is then thrown on a wicker frame work which rests on a small wagon. This is continued until fifteen or twenty bags are heaped on the wagon; the top being covered by a wicker frame; these are placed under the press and an exhausting pump set to work the juice is extracted in about two minutes, which is conveyed by troughs to a large cistern, and from thence it is let off into a range of evaporating pans made of copper which work by steam.

* * * * *

I here saw many very fine oxen fatting upon the dry cake of the Beet, sleek and fat as butter, and which I did not expect, some hundreds of *sheep* fed with the same in troughs and confined to the house, many of them very fat, and all looking extremely well; they had all been shorn and their fleeces turned into money. Some of these would weigh 16 lb. a 18 lb. per quarter, a large size for French sheep. * *

What I write will always be the dictation of my firm conviction *at the time I write:* I may have cause to change my opinions as I go on, which I ought to have no objection to do, and which I will candidly acknowledge.

* * * *

The exertions making in France and throughout Germany to simplify the process of preparing sugar from the Beet are immense and increasing. At the recent meeting of the German Naturalists at Boun, the section of agriculture and rural economy was almost entirely occupied with papers and discussions on the subject. At Valenciennes a manufacturer has succeeded in discovering a method of crystallizing the saccharine matter without producing molasses.

ARRAS, Saturday, March 25th, 1836.

J. SNIDER, JR. Esq.

Dear Sir:—I have been most unexpectedly introduced to Professor—— who is here on a mission from the government of Prussia to learn the best mode of transplanting the sugar manufacture into that country. He is accompanied by a draughtsman, a student from the Royal College of Arts; and they are two of the most charming people I ever met. I shall obtain information which money could not purchase, and which will be inestimable; it will be the result of theory and experience which they have been acquiring at great expense on this their tour of observation and which will secure, for us the most complete success. But here I must admit that much of the *poetry* with which the culture and manufacture of Beet sugar has been embellished has *gone out.* I can no longer see that it will almost prepare itself for use and drop in crystals into our coffee, but I have instead of this poetical fiction, the most perfect conviction of complete success in our object, based on common sense and the experience of every day's occurrence which far more than balances what has been lost: for this well grounded hope I am mainly indebted to the Professor, whose convictions as to the certainty of the process and the profit of the undertaking are completed by what he has witnessed at an establishment here, to which I have access by means of a letter from J. B. and where I met with him and his intelligent friend. I have now their ground for my proceeding. When I showed the Professor the different accounts which had been published, especially one at Westphalia, which shows, *almost*, that the sugar will form of itself, let but the ingredients be brought into contact with each other, he smiled and said he knew how to value these accounts; they proceeded in a great measure from the real facility with which sugar might be prepared by the best means now in use in this part of the country, and which is truly astonishing to those who have seriously gone into the examination of the thing; he has given me to understand that I must not expect to find the refining process connected with the absolute formation of the sugar; *that* he says is not necessary or desirable "let but a man be able to make on the same premises 6 or 7 hogsheads of good crystallized sugar, 3 or 4 hogsheads of molasses for fattening bullocks and sheep, in addition to 15 *lbs. of the expressed cake to mix with them, and if he is not content, why then let him go to *vapour hunting.*"

The next and most important manufactory in the world is situated in this town; I have visited it three times in company with the Professor: it belongs to a Mr. —— the most intelligent man I have met by far. He was engaged in the manufacture of sugar from the Beet in the time of Buonaparte and Chaptal, has continued it ever since, and has lately adopted a mode for himself which bids fair to obtain in the end universal *adoption:* this was the work which a gentleman at Paris said I should not be allowed to see and study without an expense of 15,000f. To this noble establishment I have free access by means of a letter from my friend J. B.; but I find it quite impossible to go into a full description of all its parts. Seventy-four men and women are employed here every day, and about ten less during every night. The works consume the steam of 120 horse power, crushing tons of Beets and evaporating the juice and crystallizing the sugar complete in 24 hours. From the washing of the roots to the pouring of the juice into crystallizing pans is only the work of 10 hours, the process being seven, consisting of washing, rasping, pressing, defficating, clarifying, and two evaporatings, in the most simple and perfect manner imaginable, all of which I shall be quite competent to on my return. Mr. —— has invented a most complete set of implements for the cultivation of a crop; *a drill that is perfect,* to sow three rows, or five if preferred, with hoes, &c. of the most simple and effective kinds; by these he is enabled to cultivate several thousands of acres of land in various parts of the country, his largest farm being 4 miles distant from hence, where I have seen his stock of oxen, sheep, and milch cows and farming horses, all fed on the cake and refuse of the sugar house, and cut chaff to wonderful profit. The cake which they are now using is six months old, preserved in magazines of which I have a plan, where it remains perfectly sweet for nine months of the year. It cuts out quite hard and is perfectly vinous in the smell. Mr. C. at this and his other works prepared in 1835, two millions and thirty thousand pounds of sugar, and expects next year to make *three millions*, the whole expense of fabrication, including rent of premises, wear and tear of machinery, interest of capital &c. has been 4 4-7 sous per lb. This man ought to know his business—he says he has made thousands of experiments, has seen all, and tried many, of others, and from these has adopted his present plan as the result. The professor is so satisfied that he has told me when I hear that Mr. C. has adopted some new mode, I will believe that it is better than what he at present uses; all other accounts of improvements &c. will go with me for nothing. I should say Mr. C. has seven works. His kindness to me has been remarkable, I dine with him to-morrow in company with the Professor and his friend. I have many results and calculations made here which have been given me by the Professor, (who has spent twelve days at the works) which I could not have obtained for any money, but which I am confident have cost him a large sum. Mr. C. ridicules the idea of making refined sugar at the same establishment at the same time, according to the poetry of the times. He thinks to produce good brown sugar is quite sufficient for one man and one process and ought else would impede. Hissetam engines is 9 horse power, 111 horse power then goes to evaporate, heat drying rooms, &c. Now the process of the manufacture of sugar as well as the proper cultivation of the plant, I shall I feel be fully competent o.

I wish to be enabled to expend a small sum in procuring models of some and information on others, which I shall not find myself competent to until I hear from you. It seems as though things were determined to turn out to my advantage. When the real authors of all the success in Sugar making first come here, they brought with them a young man as Engineer; he is in this town the head of an immense establishment for the preparation of machinery for the Sugar business, and to him I have been introduced by the kindness of another gentleman, to whom I brought letters from Paris; on my deploring the cost of the machinery in present use, he showed me the drawings of a set of his own invention, for which he is about to take a patent; he will be prepared to describe them fully to me in a short time when I shall immediately communicate to you the result.

I find that the seed which I have sent you is of the true Sugar kind; pray get it all sown and request that it may be kept quite clear, that we may do ample justice to this our first essay. The roots grew large upon land of first quality, a fine deep red loam; I shall be able to introduce a system of management which is truly excellent. Here is a saying, "the Beet culture is at the foundation of all good husbandry," and so it is;

*In these proportions.

the best crops in the country are raised after one, two, three, and even four crops of Beet, which are not dunged for generally.—They do not exhaust the soil, but their autumns are terribly against them in taking up and housing, compelling them to leave them in the fields in pits where they are not protected by any thing but a covering of earth from the winter's rains. Fifty pounds of the cake mixed with one lb. of oil cake* are sufficient for the keep of ten sheep for a day, given to them at twice, so that 100 lbs. of Beets, value 25 cts., give 6 lbs. Sugar, 4 lbs. Molasses, and 25 lbs. Cake, and sufficient food for fatting 5 large sheep per day.

(To be Continued.)

FORCE OF THE WATERS.

Extracts from Audubon's Ornithological Biography, Vol. II.

"It was the month of September. At the upper extremity of Dennisville, which is itself a pretty village, are the saw-mills and ponds of the hospitable Judge Lincoln, and other persons. The creek that conveys the logs to these ponds, and which bear the name of the village, is interrupted in its course by many rapids and narrow embanked gorges. One of the latter is situated about half a mile above the mill-dams, and is so rocky and rugged in its bottom and sides as to preclude the possibility of the trees passing along it at low water, while, as I conceived, it would have given no slight labor to an army of woodsmen or millers to move the thousands of large logs that had accumulated in it.—They lay piled in confused heaps to a great height along an extent of several hundred yards; and were in some places so close as to have formed a kind of dam. Above the gorge there is a large natural reservoir, in which the head waters of the creek settle, while only a small portion of them ripples through the gorge below, during the latter weeks of summer and in early autumn, when the streams are at their lowest. At the neck of this basin, the lumberers raised a temporary barrier with the refuse of their sawn logs. The boards were planted nearly upright, and supported at their tops by a strong tree extended from side to side of the creek, which might there be about forty feet in breadth. It was prevented from giving way under the pressure of the rising waters by having strong abutments of woodland against its centre, while the ends of these abutments were secured by wedges, which could be knocked off when necessary. The temporary dam was now finished. Little or no water escaped through the barrier, and that in the creek above it rose in the course of three weeks to its top, which was about ten feet high, forming a sheet that extended upwards fully a mile from the dam. My family was invited early one morning to go and witness the extraordinary effect which would be produced by the breaking down of the barrier, and we all accompanied the lumberers to the place. Two of the men on reaching it threw off their jackets, tied handkerchiefs round their heads, and fastened to their bodies a long rope, the end of which was held by three or four others, who stood ready to drag their companions ashore in case of danger or accident. The two operators, each bearing an axe, walked along the abutments, and at a given signal knocked out the wedges. A second blow from each sent off the abutments themselves; and the men leaping with extreme dexterity from one cross log to another, sprung to the shore with almost the quickness of thought. Scarcely had they effected their escape from the frightful peril that threatened them, when the mass of water burst forth with a horrible uproar.

All eyes were bent towards the huge heap of logs in the gorge below. The tumultuous burst of the waters instantly swept away every object that opposed their progress, and rushed in foaming waves among the timber that every where blocked up the passage. Presently a slow, heavy motion was perceived in the mass of logs; one might have imagined that some mighty monster lay convulsively writhing beneath them, struggling with a fearful energy to extricate himself from the crushing weight. As the waters rose the movement increased; the mass of timber extended in all directions, appearing to become more and more entangled each moment; the logs bounced against each other; thrusting aside, demersing, or raising into the air those with which they came in contact: it seemed as if they were waging a war of destruction, such as ancient authors describe the efforts of the Titans, the flamings of whose wrath might to the eye of the painter have been represented to the angry curlings of the waters, while the tremulous and rapid motions of the logs, which at times reared themselves almost perpendicularly, might by the poet be taken for the shakings of the confounded and discomfitted giants. Now the rushing elements filled up the gorge to its brim. The logs, once under way, ro led, reared, tossed and tumbled amid the foam, as they were carried along. Many of the smaller trees broke across, from others great splinters were sent up, and all were in some degree seamed and scarred. Then in tumultous majesty swept along the mingled wreck, the current being now increased to such a pitch that the logs, as they were dashed against the rocky shores, resounded like the report of distant artillery, or the angry rumblings of the thunder. Onward it rolls, the emblems of wreck and ruin, destruction and chaotic strife. It seemed to me as if I witnessed the route of a vast army, surprised, overwhelmed, and overthrown. The roar of the cannon, the groans of the dying, and the shouts of the avengers, were thundering through my brain; and amid the frightful confusion of the scene, there came over my spirit a melancholy feeling, which had not entirely vanquished at the end of many days. In a few hours almost all the timber that had lain heaped in the rocky gorge was floating in the great pond of the millers; and as we walked homewards we talked of the Force of the Waters."

AGRICULTURAL JURISPRUDENCE.

At the late term of the Supreme Court of Errors, in this city, a question of agricultural jurisprudence was settled, which has often been the occasion of much controversy, and sometimes of a total interruption of that social intercourse and interchange of kind feelings and offices, without which neighborhood ceases to be a blessing, and actually becomes a curse. The question arose in an action of trespass for taking a portion of the fruit from a pear tree. The facts in the case were these. The trunk of the tree stood about four feet from the line between the plaintiff and defendant, and its roots and branches extended some distance into and over the defendant's land. The defendant plucked the fruit from the branches overhanging his land, to within about one foot of the line for which the action was brought.

The defendant claimed, First, that he was tenant in common with the plaintiff, in the tree, and consequently had a right to take from the branches on his side of the line. Second, that if he was not tenant in common with the plaintiff, he was owner in severality in that part of the tree which drew its nourishment from his soil, and that he had a right to take the fruit from the branches that overhung his land. Third, that if he was not owner of that part of the tree which is sustained by and overhangs his land, still he was entitled to the fruits growing on such branches. Fourth, that he had a legal right to remove the overhanging branches and projecting roots, they being a nuisance which he had a right to abate.

The court ruled the three first points against the defendant, and decided that the ownership of the tree was in the proprietor on whose land it was originally planted, and that he of course was entitled to all the fruit, though the roots and branches may have extended into and over the land of the adjoining proprietor. On the last point the court decided that the projecting roots and branches were a nuisance which the defendant might have abated; but had no right to appropriate to his own use.—[Silk Cuturalist.]

Hops.—By accounts received from the Hop Districts in England, it appears the appearance of the crop had improved beyond expectation. It is believed that a larger crop will be gathered than has been known for several years. The quality good.—[New England Farmer.]

NOTICE TO CONTRACTORS.

PROPOSALS will be received at the Engineer's Office, in the city of Lancaster, on Wednesday, the 19th day of October next, for the Excavation, Embankment, Wall, &c., required on twenty-five miles of the Susquehanna Canal, commencing at Kline's run, (three miles below the Columbia Bridge,) and extending along the West side of the Susquehanna river, to the "Maryland State Line."

The work will be ready for examination by Contractors, at any time after the 25th inst., and the Map, Profile and Specification, may be seen at the office, one week previous to the letting.

The unusually heavy character of the work, (which affords excellent winter jobs,) offers great inducements for the attendance of Contractors possessing energy and enterprise.

It is expected that the extension of the Canal to "Tide Water," will be ready for letting about the 1st of December.

No mechanical work to be let at present.

EDWARD F. GAY,
Chief Engineer, S. C.

Lancaster, Sept. 13, 1836. 5t 38

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THE NEW-JERSEY, HUDSON AND DELAWARE RAILROAD.

NOTICE is hereby given that under and by virtue of an act of the Legislature of the State of New-Jersey, entitled, "A further supplement to an act to incorporate the New-Jersey, Hudson and Delaware Railroad Company, passed the 8th day of March A. D., eighteen hundred and thirty-two," the books to receive subscriptions to the Capital Stock of said Company will be open at 10 o'clock, A. M., of each of the days following, viz:

On Tuesday, the 8th Nov. next, at Joseph Tilman's, Columbia, N. J.

Wednesday and Thursday, 9th and 10th Nov. next, at John J. Blair's, Gravelhill, N J.

Friday, 11th Nov., at George Crockett's Marksboro, N. J.

Saturday, 12th Nov., at Peter B. Shafer's, Stillwater, N. J.

Monday, 14th Nov., at John S. Warbasse's, Newton, N. J.

Tuesday and Wednesday, 15th and 16th Nov., Abm. Brav's, Augusta, N. J.

Thursday, 17th Nov., at Stephen Ward's, Hamburg, N. J.

Friday and Saturday, 18th and 19th Nov., at H. Vibbert's, Dechertown, N. J.

Tuesday and Wednesday, 13th and 14th Dec., at United States Hotel, Newburgh, New-York.

Thursday, 15th Dec., at No 34 Wall-street, city of New-York.

And continue open at the last mentioned place until the whole stock shall have been subscribed for, or at the discretion of the Commissioners. But if the whole of the Stock shall be subscribed for at either of the above mentioned places, the books will be immediately closed.

The Capital Stock is $500,000 with liberty to increase to $800,000, divided into shares of $100 each.

The sum of $5 on each share is required to be paid on subscribing.

SAMUEL FOWLER,
JOHN BELL,
JOSEPH CHANDLER,
WILLIAM HYBERGER,
ENOS GOBLE,
DANIEL HAINES,
SAMUEL PRICE,
JOHN I. BLAIR,
JOSEPH E. EDSALL,
COMMISSIONERS

Dated Oct. 3rd, 1836 41—9t

PATENT RAILROAD, SHIP AND BOAT SPIKES.

☞ The Troy Iron and Nail Factory keeps constantly for sale a very extensive assortment of Wrought Spikes and Nails, from 3 to 10 inches, manufactured by the subscriber's Patent Machinery, which after five years successful operation, and now almost universal use in the United States, (as well as England, where the subscriber obtained a patent,) are found superior to any ever offered in market.

Railroad Companies may be supplied with Spikes having countersink heads suitable to the holes in iron rails, to any amount and on short notice. Almost all the Railroads now in progress in the United States are fastened with Spikes made at the above named factory—for which purpose they are found invaluable, as their adhesion is more than double any common spikes made by the hammer.

* * All orders directed to the Agent, Troy, N. Y., will be punctually attended to.

HENRY BURDEN, Agent.

Troy, N. Y., July, 1831.

* * Spikes are kept for sale, at factory prices, by I. & J. Townsend, Albany, and the principal Iron Merchants in Albany and Troy; J. I. Brower, 222 Water street, New-York; A. M. Jones, Philadelphia; T. Janviers, Baltimore; Degrand & Smith, Boston.

P. S.—Railroad Companies would do well to forward their orders as early as practicable, as the subscriber is desirous of extending the manufacturing so as to keep pace with the daily increasing demand for his Spikes. (1J23am) H. BURDEN.

AMES' CELEBRATED SHOVELS, SPADES, &c.

300 dozens Ames' superior back-strap Shovels
150 do do do plain do
150 do do do cast steel Shovels & Spades
150 do do Gold-mining Shovels
100 do do plated Spades
50 do do socket Shovels and Spades.

Together with Pick Axes, Churn Drills, and Crow Bars (steel pointed,) mannfactured from Salisbury refined iron—for sale by the manufacturing agents,

WITHERELL, AMES & CO.
No. 2 Liberty street, New-York.
BACKUS, AMES & CO.
No. 8 State street, Albany

N. B—Also furnished to order, Shapes of every description, made from Salsbury refined Iron 4—ytf

FRAME BRIDGES.

THE subscriber would respectfully inform the public, and particularly Railroad and Bridge Corporations that he will build Frame Bridges, or vend the right to others to build, on Col. Long's Patent, throughout the United States, with few exceptions. The following sub-Agents have been engaged by the undersigned who will also attend to this business, viz.

Horace Childs,	Henniker, N. H.
Alexander McArthur,	Mount Morris, N. Y.
John Mahan,	do do
Thomas H. Cushing,	Dover, N. H.
Ira Blake,	Wakefield, N. H.
Amos Whitemore, Fsq.,	Hancock, N. H.
Samuel Herrick,	Springfield, Vermont.
Simeon Herrick,	do do
Capt. Isaac Damon,	Northampton, Mass.
Lyman Kingsly,	do do
Elijah Halbert,	Waterloo, N. Y.
Joseph Hebard,	Dunkirk, N. Y.
Col. Sherman Peck,	Hudson, Ohio.
Andrew E. Turnbull,	Lower Sandusky, Ohio.
William J. Turnbull,	do do
Sabried Dodge, Esq.,	(Civil Engineer,) Ohio.
Booz M. Atherton, Esq.	New-Philadelphia, Ohio.
Stephen Daniels,	Marietta, Ohio
John Rodgers,	Louisville, Kentucky.
John Tillilson,	St. Francisville, Lous'a.
Capt. John Bottom,	Tonawanda, Penn
Nehemiah Osborn,	Rochester, N. Y.

Bridges on the above plan are to be seen at the following localities, viz. On the main road leading from Baltimore to Washington, two miles from the former place. Across the Metawamkeag river on the Military road, in Maine. On the National road in Illinois, at sundry points. On the Baltimore and Susquehanna Rrailroad at three points. On the Hudson and Patterson Railroad, in two places. On the Boston and Worcester Railroad, at several points. On the Boston and Providence Railroad, at sundry points. Across the Contocook river at Hancock, N H. Across the Connecticut river at Haverhill, N. H. Across the Contoocook river, at Henniker, N. H. Across the Souhegan river, at Milford, N. H. Across the Kennebec river, at Waterville, in the state of Maine.—Across the Genesse river, at Mount Morris, New-York, and several other bridges are now in progress.

The undersigned has removed to Rochester, Monroe county, New-York, where he will promptly attend to orders in this line of business to any practicableextent in the United States, Maryland excepted.

MOSES LONG.
General Agent of Col. S. H Long.
Rochester, May 22d, 1836. 19y-tf.

ALBANY EAGLE AIR FURNACE AND MACHINE SHOP.

WILLIAM V. MANY manufactures to order. IRON CASTINGS for Gearing Mills and Factories of every description.

ALSO—Steam Engines and Railroad Castings of every description.

The collection of Patterns for Machinery, is not equalled in the United States. 9—1y

ARCHIMEDES WORKS.

(100 North Moor street, N. Y.)
NEW-YORK, February 12th, 1836.

THE undersigned begs leave to inform the proprietors of Railroads that they are prepared to furnish all kinds of Machinery for Railroads, Locomotive Engines of any size, Car Wheels, such as are now in successful operation on the Camden and Amboy Railroad, none of which have failed—Castings of all kinds, Wheels, Axles, and Boxes, furnished at shortest notice.

H. R. DUNHAM & CO.
4—ytf

RAILROAD CAR WHEELS AND BOXES, AND OTHER RAILROAD CASTINGS.

Also, AXLES furnished and fitted to wheels complete at the Jefferson Cotton and Wool Machine Factory and Foundry, Paterson, N. J. All orders addressed to the subscribers at Paterson, or 60 Wall street, New-York, will be promptly attended to.

Also, CAR SPRINGS
Also, Flange Tires, turned complete
18 ROGERS, KETCHUM & GROSVENOR

STEPHENSON,

Builder of a superior style of Passenger Cars for Railroads.

No. 264 Elizabeth street, near Bleecker street, New-York.

RAILROAD COMPANIES would do well to examine these Cars; a specimen of which may be seen on that part of the New-York and Harlaem Railroad now in operation. J25tf

RAILWAY IRON, LOCOMOTIVES, &c.

THE subscribers offer the following articles for sale.

Railway Iron, flat bars, with countersunk holes and mitred joints,

						lbs.	
350 tons	2½	by	½,	15 ft in length,	weighing	$4\frac{68}{100}$	per ft.
280 "	2	"	½,	" "	"	$3\frac{50}{100}$	"
70 "	1¼	"	½,	" "	"	2½	"
80 "	1¼	"	½,	" "	"	$1\frac{25}{100}$	"
90 "	1	"	½,	" "	"	½	"

with Spikes and Splicing Plates adapted thereto. To be sold free of duty to State governments or incorporated companies.

Orders for Pennsylvania Boiler Iron executed.

Rail Road Car and Locomotive Engine Tires, wrought and turned or unturned, ready to be fitted on the wheels, viz. 30, 33, 36, 42, 44, 54, and 60 inches diameter.

E. V. Patent Chain Cable Bolts for Railway Car axles, in lengths of 12 feet 6 inches, to 13 feet 2¼, 2¾ 3, 3¼, 3½, 3¾, and 3¾ inches diameter.

Chains for Inclined Planes, short and stay links, manufactured from the E. V. Cable Bolts, and proved at the greatest strain.

India Rubber Rope for Inclined Planes, made from New Zealand flax.

Also Patent Hemp Cordage for Inclined Planes, and Canal Towing Lines.

Patent Felt for placing between the iron chair and stone block of Edge Railways.

Every description of Railway Iron, as well as Locomotive Engines, imported at the shortest notice, by the agency of one of our partners, who resides in England for this purpose.

Mr. Solomon W. Roberts, a highly respectable American Engineer, resides in England for the purpose of inspecting all Locomotives, Machinery, Railway Iron &c. ordered through us

A. & G. RALSTON.
28-tf Philadelphia, No. 4, South Front st.

NOTICE TO CONTRACTORS.

PROPOSALS for excavating and embanking the Georgia Railroad from the upper end of the work, now under contract, to Greensboro', a distance of 34 miles, will be received at the Engineer's Office, at Crawfordville, on the 21st and 22d days of October next.

—ALSO—

At the same time, for the Branch to Warrenton, 4 miles. And if prepared in season, the Branch to Athens, length 37 miles.

J. EDGAR THOMSON,
33—t22o Civil Engineer.

TO RAILROAD CONTRACTORS.

PROPOSALS will be received at the town of Lindon, until the 20th day of December next, for the graduation of the Lindon Railroad. A profile of the route, with plans and specifications of the work, will be exhibited at Lindon, for ten days previous to the letting, and all other information given on application to the subscriber, or the Assistant Engineer.

PROPOSALS will also be received at the same time and place, for furnishing and delivering at Beckley's Landing, 95,000 feet (L. M.) of long leaf pine or cypress scantling, sawed 5 by 9 inches, to be free from sap, knots or wind shakes, and 20, 25 and 30 feet long. Also 60,000 feet, or more, (L. M.) of white, or post oak scantling, sawed 5 by 7 inches, length to be specified hereafter, and 60,000 feet (L M.) of white or post oak plank, 2 inches thick, 9 foot wide and 15 feet long.

Also for furnishing and delivering on the line of the road 10,500 undressed post oak logs, 8 feet long, and 10 to 15 inches in diameter.

Also for furnishing and delivering 3,160 post oak caps, dressed 8 by 10 inches, 8 feet long, and 6,320 post oak posts, dressed 10 inches square and of lengths hereafter to be specified.

Recommendations will be expected in all cases, of persons not known to the officers of the Company, or to the Engineer. For the information of persons at a distance, I would state, that the Lindon Railroad commences at Beckley's Landing on the Tombeckby River, a stream navigated by Steamboats the greater portion of the year;—and having a direct communication with Mobile and New-Orleans will afford the facility of procuring supplies and implements necessary for the hands employed on the work, or their ready conveyance hither, if procured at a distance.

Persons having mills on the river and disposed to contract for furnishing timber, will have the facility of delivering it by water communication. The country through which the road passes, being perfectly healthy, and the mildness of the climate admitting of operations throughout the winter season, renders the contract peculiarly desirable to those wanting winter employment

D H. BINGHAM, C. E.
Lindon, Ala., Sept, 17, 1836. 41—3t